

C  
H26uZs  
1908-20





Return this book on or before the  
**Latest Date** stamped below.

Theft, mutilation, and underlining of books  
are reasons for disciplinary action and may  
result in dismissal from the University.

University of Illinois Library

JUN 19 1967

SUMMER

AND

CATALOGUE OF

L161—O-1096

CAMBRIDGE, MASS.

Published by the University

1908

### SCHEDULE OF LECTURE HOURS

[illegible]



C  
H26uZs

1908-20

## CONTENTS.

	PAGE
ACADEMIC CREDIT FOR SUMMER COURSES . . . . .	13
ADMISSION TO GRADUATE SCHOOLS . . . . .	18
"    "    HARVARD COLLEGE . . . . .	16
"    "    RADCLIFFE COLLEGE . . . . .	16
"    "    SUMMER SCHOOL . . . . .	12
APARTMENTS AND HOUSES . . . . .	21
AUDITORS IN SUMMER COURSES . . . . .	12
BOARD AND ROOMS . . . . .	21
CERTIFICATES ON SUMMER COURSES . . . . .	13
CLASS-ROOM ATTENDANCE REQUIRED . . . . .	10
CLASS-ROOM EXERCISES . . . . .	5
COLLEGE ADMISSION SUBJECTS . . . . .	9
COURSES OF STUDY OFFERED . . . . .	5
DEGREES OF A.B. AND S.B. . . . .	16
DEGREES OF A.M., S.M., PH.D., AND S.D. . . . .	18
DRAFTS, ETC., FOR EXPENSES . . . . .	20
EVENING LECTURES, READINGS, AND RECEPTIONS . . . . .	24
EXPENSES . . . . .	21
FEES: TUITION, AUDITOR'S, REGISTRATION . . . . .	19
FINAL EXAMINATIONS . . . . .	31
GRADUATES OF NORMAL SCHOOLS . . . . .	17
HISTORICAL EXCURSIONS . . . . .	95
HOURS OF CLASS-ROOM WORK . . . . .	10
LABORATORIES . . . . .	27
LIBRARIES . . . . .	26
LIST OF BOARDING AND LODGING HOUSES AND MAP . . . . .	188
LIST OF STUDENTS IN 1907 . . . . .	141
MAIL OF SUMMER STUDENTS . . . . .	22
MORNING PRAYERS IN APPLETON CHAPEL . . . . .	11
MUSEUMS . . . . .	26
PAYMENT OF FEES . . . . .	20
PLAN OF WORK . . . . .	12
PROMOTION OF TEACHERS . . . . .	14
PURPOSES OF SCHOOL . . . . .	11
READING ROOMS . . . . .	27
RECREATION . . . . .	25
REDUCED RAILWAY EXPENSES . . . . .	22
REGULATIONS FOR COUNTING COURSES FOR A BACHELOR'S DEGREE IN HARVARD AND RADCLIFFE COLLEGES . . . . .	15
SOCIAL AND REST ROOMS . . . . .	28
SUGGESTIONS TO STUDENTS . . . . .	186
SUMMER SCHOOL ASSOCIATIONS . . . . .	28
TEACHERS' ASSOCIATION . . . . .	28
TERM OF SUMMER SCHOOL . . . . .	10
TRAVELLING EXPENSES . . . . .	22
TUITION, AUDITOR'S, AND REGISTRATION FEES . . . . .	19

univ of

## HARVARD UNIVERSITY.

CHARLES WILLIAM ELIOT, LL.D., *President.*

---

### FACULTY OF ARTS AND SCIENCES.

LE BARON RUSSELL BRIGGS, LL.D., *Dean of the Faculty.*

BYRON SATTERLEE HURLBUT, A.M., *Dean of Harvard College.*

JOHN HENRY WRIGHT LL.D., *Dean of Graduate School of Arts and Sciences.*

WALLACE CLEMENT SABINE, S.D., *Dean of Graduate School of Applied Science.*

---

### COMMITTEE IN CHARGE OF THE SUMMER COURSES OF INSTRUCTION IN ARTS AND SCIENCES.

JAMES LEE LOVE, A.M., *Assistant Professor of Mathematics,*  
*Chairman.*

JOSIAH ROYCE, Ph.D., LL.D., *Professor of the History of Philosophy.*

PAUL HENRY HANUS, LL.D., *Professor of the History and Art of Teaching.*

GEORGE WASHINGTON PIERCE, Ph.D., *Assistant Professor of Physics.*

JEREMIAH DENIS MATTHIAS FORD, Ph.D., *Smith Professor of the French and Spanish Languages.*

GEORGE HENRY CHASE, Ph.D., *Assistant Professor of Classical Archaeology, and Curator of Classical Antiquities.*

---

Office of the Summer School, J. L. LOVE, *Chairman,*

4 Lawrence Hall, Cambridge, Mass.

Office of the Bursar, Mr. CHARLES FRANK MASON, A.B.,

Dane Hall, Cambridge, Mass.

Office Hours, 9 A.M. to 1 P.M.



## SUMMER SCHOOL OF ARTS AND SCIENCES.

---

### COURSES OF INSTRUCTION.

The thirty-eighth session of the Summer Courses of Instruction in Arts and Sciences of Harvard University will begin on Wednesday, July 1, and end on Wednesday, August 12, 1908.

Class-room exercises will be held ordinarily in the forenoons of five days of the week for six weeks.

The following ninety-two courses are offered: —

*The \* is prefixed to Courses accepted for a degree in Harvard University.*

#### **Anthropology**, one course:

\*Introductory Course (p. 32). Dr. A. M. TOZZER.

#### **Astronomy**, one course:

\*Introductory Course (p. 33). Professor W. C. BRENKE.

#### **Botany**, two courses:

\*Introductory Course (p. 35). Professor M. A. CHRYSLER.

\*Advanced Course (p. 37). Mr. R. B. THOMSON.

#### **Chemistry**, seven courses:

\*Elementary Chemistry (p. 39);

\*Quantitative Analysis (p. 41); and

\*Inorganic Research (p. 43).

Professor G. P. BAXTER and Mr. A. C. BOYLSTON.

\*Organic Chemistry (p. 39);

\*Qualitative Analysis (p. 40); and

\*Organic Research (p. 43).

Professor H. A. TORREY.

\*Physical Chemistry (p. 42).

Mr. H. L. FREVERT.

#### **Classics**, four courses:

Greek for Beginners (p. 44); and

\*Life of the Ancient Greeks (p. 45). Professor C. B. GULICK.

\*Roman Poets (p. 47).

Professor E. K. RAND.

Latin for Teachers (p. 46).

Dr. A. S. PEASE.

**Education**, five courses :

- \*History of Modern Education (p. 50) ; and
- \*Principles of Education (p. 52). Professor E. O. SISSON.
- \*School Administration (p. 53). Supt. FRANK E. SPAULDING.
- \*Methods of Teaching History (p. 55). Dr. JAMES SULLIVAN.
- \*Methods of Teaching Mathematics (p. 56).  
Principal GEORGE W. EVANS.

**Engineering**, ten courses :

- \*Plane and Topographical Surveying (p. 58) ;
- \*Railroad Engineering (p. 59) ; and
- \*Geodetic Surveying (p. 59).  
Professor H. J. HUGHES, Director.
- \*Elementary Statics (p. 60) ;
- \*Elementary Resistance of Materials (p. 60) ; and
- \*Elementary Kinematics and Kinetics (p. 61).  
Mr. H. P. FORTÉ.
- \*Chipping, Filing, and Fitting (p. 63) ;
- \*Blacksmithing (p. 63) ;
- \*Pattern Making and Foundry Practice (p. 63) ; and
- \*Machine-shop Practice (p. 63).  
Messrs. F. R. PLEASANTON and E. R. MARKHAM.

**English**, ten courses :

- Elementary Composition (p. 64). Mr. H. R. SHIPHERD.
- Advanced Composition (p. 65) ; and
- Outlines of English Literature (p. 68).  
Professor A. E. HANCOCK.
- Second Advanced Composition (p. 66) ; and
- Eighteenth Century English Literature (p. 69).  
Mr. H. M. RIDEOUT.
- College Admission Requirements in English (p. 67).  
Mr. C. R. NUTTER.
- \*Anglo-Saxon (p. 68). Mr. J. W. RANKIN.
- Nineteenth Century English Literature (p. 70) ; and
- Evening Readings from English Literature (p. 25).  
Mr. C. T. COPELAND.
- English Poets of the Romantic Period (p. 70).  
Dr. P. A. HUTCHISON.



**Fine Arts, six courses :**

- \*History of European Architecture to A.D. 1000 (p. 71) ; and
- \*History of European Architecture from A.D. 1000 to close of Renaissance (p. 73). Professor H. L. WARREN.
- \*Architectural Design (p. 73). Professor W. L. MOWLL.
- \*Design as Applied in the Arts (p. 74) ; and
- \*Drawing and Painting in Representation (p. 76).  
Dr. DENMAN W. ROSS, Messrs. M. MOWER and E. O. PARKER.
- \*The History of Ancient Art (p. 78). Dr. O. S. TONKS.

**Geology and Geography, five courses :**

- \*Field-Work in Historical and Structural Geology in Montana (p. 79). Dr. G. R. MANSFIELD.
- \*Geological and Petrographical Studies in Montana or New England (p. 81). Professor J. E. WOLFF.
- \*Geological Field-Work in Brazil (p. 81).  
Professor J. B. WOODWORTH.
- \*Physiographic Field-Investigation in Northern Italy and Southern Switzerland (p. 81). Professor W. M. DAVIS.
- \*Physiographic Studies in Central France (p. 81).  
Professor D. W. JOHNSON.

**German, three courses :**

- \*Intermediate Course in Grammar and Composition and Methods of Teaching German (p. 83) ; and  
German Conversation (p. 84). Dr. A. W. BOESCHE.
- \*German Dramatists of the Nineteenth Century (p. 84).  
Dr. H. J. WEBER.

**History and Government, six courses :**

- \*Ancient Greek History (p. 85) ; and
- \*Ancient Roman History (p. 87). Professor W. S. FERGUSON.
- \*European History from A.D. 800 to A.D. 1648 (p. 88) ;
- \*American History from A.D. 1763 to A.D. 1829 (p. 89).  
Professor WILLIAM MACDONALD.
- \*Civil Government (p. 91) ; and
- \*Municipal Government (p. 94). Professor W. B. MUNRO.

**Mathematics, five courses :**

- \*Advanced Algebra (p. 100). Mr. A. B. FRIZELL.
- \*Plane Trigonometry (p. 99). Professor W. C. BRENKE.

\*Solid Geometry (p. 100). Principal GEORGE W. EVANS.

\*Plane Analytic Geometry (p. 101). Professor J. L. LOVE.

Differential and Integral Calculus (p. 102).

Professor W. F. OSGOOD.

**Music, two courses :**

\*Harmony and Counterpoint (p. 103) ; and

\*Musical Analysis and Appreciation of Music (p. 104).

Professor J. P. MARSHALL.

**Philosophy and Psychology, six courses :**

\*History of Philosophy (p. 108) ; and

\*Introduction to Philosophy (p. 105). Professor RALPH B. PERRY.

\*Introduction to Ethics for Teachers (p. 106) ; and

\*Metaphysics (p. 109). Professor JOSIAH ROYCE.

\*Descriptive and Experimental Psychology (p. 111) ; and

\*Applied Psychology (p. 112).

Drs. ROBERT M. YERKES and C. S. BERRY.

**Physical Education, eight courses :**

Four-Years' Series of Courses in Theory — including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, etc. (p. 114) ; and

Four-Years' Series of Courses in Practice — including Swedish Free Movements, Free Exercises, Gymnastic Games, Indian Clubs, Field Athletics, Dancing Steps, Aesthetic Dancing, Corrective Gymnastics, etc. (p. 114).

Dr. D. A. SARGENT, Director.

**Physics, two courses :**

Elementary Experimental Physics for Teachers (p. 127).

Professor W. E. McELFRESH and Mr. H. C. HAYES.

\*Advanced Experimental Physics (p. 129).

Mr. P. W. BRIDGMAN.

**Public Speaking and Reading, four courses :**

Development of the Voice (p. 132). Mr. B. G. WILLARD.

Platform Reading and Discussion (p. 132) ; and

Platform Speaking (p. 133).

Professors I. L. WINTER and E. M. LEWIS.

Oral Reading of English Classics (p. 134).

Professor I. L. WINTER.



**Romance Languages, five courses :**

\*Intermediate French for Teachers (p. 136).

Professor C. H. C. WRIGHT.

French Conversation (p. 137).

Mr. ALPHONSE BRUN.

\*French Literature of the Nineteenth Century (p. 138).

Professor ALCÉE FORTIER.

Elementary Spanish (p. 138) ; and

\*Advanced Spanish Composition and Translation (p. 139).

Mr. G. L. LINCOLN.

*The attention of teachers interested in courses treating College Admission Subjects, in most cases mainly from the point of view of the teacher, is called to the following courses : —*

Astronomy (p. 33) ;

Botany (p. 35) ;

Chemistry (p. 39) ;

Greek for Beginners (p. 44) ;

Latin (p. 46) ;

Methods of Teaching History (p. 55) ;

Methods of Teaching Mathematics (p. 56) ;

English (pp. 64-68) ;

German (pp. 83-84) ;

History (pp. 85-90) ;

Civil Government (p. 91) ;

Mathematics (pp. 99-101) ;

Music (p. 103) ;

Physics (pp. 127-131) ;

French (pp. 136-137) ; and

Spanish (pp. 138-140).

Detailed descriptions of the several courses of study to be given in 1908 may be found on pages 32-140. These descriptions show briefly the aims and scope of the work, the fees, the hours of meeting of the classes, and the addresses of the Instructors, who invite correspondence with interested persons desiring fuller information on any point connected with the courses they offer.

## GENERAL STATEMENT

### CLASS-ROOM ATTENDANCE REQUIRED

There will be a minimum of thirty hours of class-room work in each course.

In many courses there will be from forty to sixty hours of class-room exercises; and in laboratory courses, field courses, and drawing courses, the student will be expected to give from two to five hours a day, in addition to the lecture periods, to work under the direction of the instructors and assistants. There are no required exercises, as a rule, on Saturdays.

Unless otherwise announced in the description of the course, the first meetings of all classes will be held at 3 or 4 P.M., on Wednesday, July 1. The hours for subsequent daily meetings are announced in the descriptions of the courses contained in this pamphlet. Necessary changes of hours will be announced on the bulletin boards at the opening of the School, or arranged by the instructor at the first meeting.

*Work will begin promptly on July 1 in all courses announced for this date, and students are urged to be present at the first class meeting.*

The rooms in which the several classes are to meet and the hours of meeting will be announced on the bulletin boards at the opening of the School. A printed list of class-rooms showing the hours of daily meetings may be obtained at the Office of the Summer School when the student registers.

### TERM OF THE SCHOOL

The Session of 1908 will open on Wednesday, July 1, and close on Wednesday, August 12; and, unless otherwise stated in the description of the course, the work in each course will continue throughout this term.

Final examinations will be held on August 11 and 12. (See page 31.)

Students are urged to enter promptly at the beginning, and to remain until the end of the term. (See p. 20.)

All candidates for the Summer School Certificate in any course, and all who desire to count a Summer Course for a degree, are required to pass the final examination satisfactorily and to fulfil all other requirements of the course. (See p. 13.)

It is hoped that the early dates of opening and closing may give teachers opportunity to profit by a longer vacation between the close of the Summer School and the beginning of their work in the fall.

### MORNING PRAYERS

Prayers will be conducted in Appleton Chapel at 8.45 A.M. daily, except Sunday. All members of the Summer School are invited to attend.

### PURPOSES OF THE SUMMER COURSES

The Harvard Summer Courses of Instruction were instituted in 1871: and the fundamental aim of the Summer School has always been to open the educational resources of Harvard University as freely as possible to teachers and students for study during the long vacation.

More than twelve thousand persons have been members of the Summer School, of whom 5740 have attended in the last eight years.

Sixty-six per cent. of the entire attendance have been teachers in service, and fifty-five per cent. have been women.

The courses are designed to serve, as fully as possible, the needs of the following groups of men and women:

- I. Teachers, and those preparing to teach, — in elementary, secondary, normal, and technical schools or in colleges and universities, — and school principals, supervisors, and superintendents, who wish to pursue courses for self-improvement and promotion, or for the purpose of offering the work in partial fulfilment of the requirements for a degree in Harvard University or in Radcliffe College (for women) or in some other institution of learning where the work pursued at Harvard may be accepted.



- II. Students in Harvard College or Radcliffe College, or in any other school, college, or university, who may wish to use the long vacation to take courses for which they cannot find a place in their winter schedule of studies.
- III. Teachers who are candidates for admission to colleges, who need one or two subjects for the completion of entrance requirements.
- IV. Artists, botanists, chemists, designers, musicians, physical directors, public speakers, writers, and any other qualified persons who may find the offered courses serviceable.

*Special attention is given to courses for teachers in preparatory schools, treating, from the teachers' point of view, the principal college admission subjects—including English, French, German, Greek, Latin, Spanish, history, mathematics, physics, chemistry, botany, astronomy, civil government, harmony, and counterpoint. (See p. 9.)*

## ADMISSION TO SUMMER COURSES: PLAN OF WORK

No entrance examination is required for admission to a Summer Course. The Instructors may be consulted by letter or in person by any one who wishes information about requisite preparation or preliminary reading for their courses.

The general plan of work in the Summer Courses is such that the student may most profitably concentrate all of his efforts on a single course. In nearly all courses this limitation of field is expected. There are some combinations of two courses which may be advisably taken together under favorable conditions, but in no case should the student attempt to do the required work in more than two courses together.

The right to attend any courses given in the Summer School as an Auditor may be secured by any member of the School who has registered for the full work in one course. (See page 19.)

In many of the subjects offered the work is arranged so that the student may pursue a sequence of courses in successive sessions of the School.

## CERTIFICATES ON SUMMER COURSES

The Summer School Certificate — indicating the course pursued, the number of hours of class-room attendance required, also that the same grade of examinations and tests of work demanded in corresponding courses in term-time have been satisfied, and (when the course is accepted for academic credit) showing the amount of credit given for it to students who in other respects satisfy the requirements for a degree in Harvard University, — is awarded to each student who fulfils satisfactorily the prescribed work in a Summer Course. The Certificate is awarded for each course so completed.

Students are admitted to a Summer Course whether they are candidates for the Certificate or not; and it is generally advisable for a student who wishes to take two courses together to try for the Certificate in only one of them, simply hearing the lectures and taking notes in the other.

A special certificate in Physical Training is awarded to those who complete satisfactorily a four-years' series of courses in this subject. A certificate in Physical Training is given each year, also, to students who complete satisfactorily the work of that year. (See pages 124-125.)

## ACADEMIC CREDIT FOR SUMMER COURSES

The greater number of the Summer Courses are accepted in fulfilment of the requirements for the bachelors' degrees by Harvard College and Radcliffe College. Some of the courses may be accepted in partial fulfilment also of the requirements for the masters' degrees by the Graduate School of Arts and Sciences and the Graduate School of Applied Science of Harvard University and by Radcliffe College. (See Degrees, pages 16-19.)

Many of the Summer Courses, although not directly counted for a master's or a doctor's degree, will be found very serviceable in preparation for a plan of study leading to these degrees.

The courses which are accepted for a degree are indicated in the annual Announcement of the Summer Courses. The list of accepted courses is published also in the annual Announcement of the Courses of Instruction offered by the Faculty of Arts and Sciences, and in the University Catalogue.

Summer Students who have previously been admitted to regular standing in Harvard College or Radcliffe College, or to either of the Graduate Schools above named, will be credited for each accepted Summer Course which they complete in conformity with the prescribed conditions, in the same manner as if the course were completed in the regular academic year. (See Regulations, pages 15-16.)

Summer Students who have not previously been admitted to one of the above-named Colleges or Graduate Schools, but are admitted after completing an accepted Summer Course satisfactorily, will be credited at the time of their admission for every accepted Summer Course so completed, either in satisfaction of entrance requirements or towards a degree. *Teachers and others may thus accumulate by summer work in successive years a considerable part of the requirements for a bachelor's degree in Harvard or Radcliffe College.* (See Admission, page 16, and Higher Degrees, page 18.)

Summer Students who are registered, or who expect to register, in other colleges or universities may present the Summer School Certificates at such institutions for such academic credit as the several institutions may be willing to allow for the Summer Course: and they are advised to inquire of the Secretary of the institution where they propose to offer the Summer Course as to what credit will be allowed them for it.

In nearly all cases a Summer Course is rated as a "Half-Course"\* in fulfilment of the requirements for a degree in Harvard University.

The Summer School Certificate is usually accepted for the promotion of teachers, and for the exemption from certain of the examinations required for licenses to teach, in localities where examinations are held for these purposes. Teachers desiring to take Summer Courses with such ends in view are advised to obtain information from the School Officer where they intend to offer the work as to what credit will be allowed them for it.

\* The term "Half-Course" is the unit expressing the amount of work required in a college course which meets three times a week during *half an academic year*. It represents about forty-five one-hour class-room exercises combined with from ninety to one hundred and thirty-five hours of outside work, — or the equivalent in laboratory work.

A "Half-Course" is from one-eighth to one-tenth of the work of an academic year in Harvard University.



## REGULATIONS FOR THE COUNTING OF SUMMER COURSES FOR THE BACHELORS' DEGREES BY STUDENTS IN HARVARD AND RADCLIFFE COLLEGES.

Summer courses, whether carried on in Cambridge or elsewhere, may be counted in fulfilment of the requirements for degrees under the Faculty of Arts and Sciences, under the following special conditions :\* —

1. Any Summer Course, in order to be so counted, must have been proposed by the department in which it is given, and approved by the Faculty as one of its courses of instruction.

2. The work in a course thus approved must be performed under the supervision of one or more of the officers of instruction appointed and confirmed by the governing boards of the University.

3. Proper tests of systematic application and proficiency must be applied in the progress of any such course, in accordance with the Regulations of the Faculty for Harvard College.

4. A final examination upon the work of the course must be held in Cambridge not later than October 1st, under the charge of an officer of instruction regularly appointed as above, and under the provisions made by the Regulations for the conduct of examinations; and the results, in terms of the grades established by the Faculty, must be reported to the Recorder not later than October 15th. The grade or grades assigned to any student shall then be reported to his father or guardian, and the names of those students in any Summer Course who attain grade A or B shall be printed in the next annual rank-lists.

5. Summer Courses approved by the Faculty as courses to be counted towards any degree shall be included in the annual Announcement of Courses of Instruction.

6. A Summer Course cannot be used to secure exemption from any part of the elective work required in any academic year, except by permission of the proper Administrative Board.

7. A student who wishes to take a Summer Course for the purpose of counting it for a bachelor's degree, shall be required to

\* *These conditions do not apply to the Engineering courses given at Squam Lake, or to the Shopwork courses given in Cambridge; since these are a part of the prescribed regular work of the Division of Engineering and require more time of the student.*

consult the Instructor at the beginning of the course, and obtain his consent to count it.

8. A student shall be required to obtain a grade of C or higher in a summer course in order to count it for a bachelor's degree. (In 1908 a student is required to attain a grade of B or higher in the courses in History and Government, with the exception of the course in Municipal Government, in which a grade of C is sufficient.)

9. No student in Harvard College shall, after 1907, be allowed to count towards a Bachelor's degree more than one of the half-courses offered in a single session of the Summer School, unless authorized in advance by the Dean of Harvard College.

10. Summer Courses cannot be counted under the above provisions for more than the equivalent of one full course in any one year.

11. No student may count a Summer Course for a degree if he counts an equivalent course taken in the regular academic year.

12. Any member of a summer class who proves unsatisfactory may be excluded from the class by the Instructor, with the consent of the Chairman of the Committee on Summer Courses of Instruction.

## ADMISSION TO HARVARD AND RADCLIFFE COLLEGES BACHELORS' DEGREES

Harvard College confers the degrees of Bachelor of Arts, A.B., and Bachelor of Science, S.B., on men only. Radcliffe College confers the degree of Bachelor of Arts, A.B., on women only.

All candidates for a bachelor's degree in Harvard University must be admitted to Harvard College or Radcliffe College by the authorized Committee; and a minimum of one year of resident study as a regular member of a class in one of these Colleges is required of every person on whom a bachelor's degree is conferred by Harvard University.

A student who wishes to enter Harvard or Radcliffe College as a candidate for a bachelor's degree must ordinarily pass examinations for admission, either those of the University or those of the College Entrance Examination Board; but if he comes from another

college or scientific school or normal school, he may be admitted without examination as indicated below.

Graduates of other colleges and scientific schools, and students who have completed creditably the work of at least one year at other colleges and scientific schools, may be admitted without examination to the standing in Harvard or Radcliffe College for which their previous training seems to qualify them. Such students may win the bachelor's degree in one, two, or three years, according to the number of courses for which they receive credit at the time of admission to regular standing.

Graduates of normal schools of good standing may be admitted without examination as unclassified or special students to any courses of instruction for which their previous training has qualified them. If the instruction in a normal school is of collegiate grade and based upon an adequate high school course, graduates of such a school may be treated as applicants for admission from other colleges, and may be admitted to candidacy for a degree on terms which the Committee on Admission will determine in each case.

Special Students also — that is, students who are not registered candidates for a degree, and not members of a college class, — may be admitted without examination, or with partial examination, to Harvard or Radcliffe College. Special Students may be transferred to regular standing in a college class as candidates for a degree, subsequently, by satisfying the college entrance requirements. On such transfer they will be credited for courses previously completed in the regular academic year, or for accepted courses in the Summer School.

Inquiries concerning the terms and methods of admission, and the requirements for the bachelors' degrees, should be addressed to, —

Mr. J. G. HART, *Chairman* (For Harvard College),  
20 University Hall, Cambridge, Mass.  
Miss MARY COES, *Secretary* (For Radcliffe College),  
10 Garden Street, Cambridge, Mass.



## ADMISSION TO THE GRADUATE SCHOOLS HIGHER DEGREES

The Graduate School of Arts and Sciences of Harvard University confers the degrees of Master of Arts, A.M., Master of Science, S.M., Doctor of Philosophy, Ph.D., and Doctor of Science, S.D., on men only.

The Graduate School of Applied Science confers the Master's Degree in Civil Engineering, Mechanical Engineering, Electrical Engineering, Architecture, Landscape Architecture, Forestry, Physics, Chemistry, Zoölogy, and Geology, and the degrees of Mining Engineer and Metallurgical Engineer, on men only.

Radcliffe College confers the degrees of A.M. and Ph.D. on women only.

Admission to the Graduate Schools of Harvard University and to the Graduate Instruction in Radcliffe College is granted to graduates of colleges and scientific schools of good standing. But such admission does not necessarily imply admission to candidacy for a higher degree. Such candidacy is determined by an appropriate committee after considering the student's previous work and the proposed schedule of studies. The candidate for a master's degree must submit a programme of courses forming a consistent plan of work pursued with some definite aim, whether it lies in a single department or field of study or in more than one; and the work must be completed with distinction. The approval of such a programme by the proper Division Committee on Honors and Higher Degrees and by the appropriate Administrative Board constitutes formal admission to candidacy for the master's degree.

Single courses, therefore, cannot be offered for a master's degree, except as a part of a schedule of suitable, related studies. The statutes of the University require, moreover, that no candidate for the above-named degrees be recommended "except after thorough public examination, and a residence at the University of at least one year."

Summer Courses which are approved as suitable for candidates for the master's degrees will be credited to members of the above-named Graduate Schools and of Radcliffe College, in partial fulfilment of the requirements for these degrees, in conformity with the

regulations whose details may be learned by addressing the officers named below.

Progress towards the masters' degrees may now be made by means of the Summer Courses when candidates need more than a full year of resident study for the degree, or when they lack some collateral work which cannot be conveniently done during the year of required residence.

*The Chairman of the Committee on Summer Courses would be obliged if graduates who are interested in the offering of advanced courses in the Summer School, suitable for candidates for the higher degrees, will communicate with him concerning the courses they wish to pursue; so that the Committee may be able to provide, when possible, for the courses desired.*

Graduates who wish further information concerning the requirements for the higher degrees in Harvard University are advised to make application, if practicable, before beginning the course of study, to —

Mr. G. W. ROBINSON, *Secretary* (In Arts and Pure Science),  
10 University Hall, Cambridge, Mass.

Professor W. C. SABINE, *Dean* (In Applied Science),  
16 University Hall, Cambridge, Mass.

(Both the foregoing for men only.)

Miss MARY COES, *Secretary* (For Radcliffe College),  
10 Garden Street, Cambridge, Mass.

## TUITION, AUDITOR'S, AND REGISTRATION FEES

The tuition fee varies from \$20 to \$30 in the different courses. In the languages, in mathematics, and in such others as are purely lecture courses, the fee is, in nearly all cases, \$20. In the courses in Fine Arts, and in others where special assistance and oversight are required, the fee is \$25. In the laboratory courses in astronomy, botany, physics, and chemistry the fee is \$30. In chemistry there is an additional charge for materials and for breakage of apparatus.

The student who registers in more than one course is required to pay the tuition fee for each course in which he registers. But any student who has registered and paid the full fee in one course

may, for an additional fee of \$10, secure the privilege of attending the lectures in any other course or courses given in Cambridge, as an auditor, except in Physical Education in which special arrangements must be made. This auditor's privilege will not entitle the student to participate in any of the class exercises, or to take any of the examinations, or to receive any record or credit in the courses which he attends as an auditor.

A registration fee of \$2 will be required of all students.

Students may register on and after June 29.

### PAYMENT OF FEES

The tuition fee for each course, and charges for supplies or laboratory, are stated in the description of the course herein.

No reduction of fee will be allowed for late entrance, or for withdrawal, except on account of illness or other like serious and unavoidable cause. In no case will a reduction be allowed when the student is present during more than half the term. All claims for a reduction must be presented to the Chairman of the Committee on or before August 12, 1908.

When more than one course is taken the full fee for each course is charged unless the contrary is stated in the description of the course herein, where further details about fees are given.

Before being enrolled as a member of a class each student is required to register in person at the office of the Summer School, and to pay all fees and charges at the Bursar's Office in Dane Hall.

*All fees are payable in advance to the Bursar. (See page 4.)*

*Money to meet expenses should be brought in cash, bank drafts, certified checks, or cashiers' checks. Checks or Drafts should be drawn on Boston, New York, or Philadelphia banks in order to save cost of exchange.*

*Private checks are not negotiable.*



## BOARD, ROOMS, AND EXPENSES.

Table-board may be found in Cambridge during the session of the Summer School in private boarding houses or in public restaurants near the college buildings. It may be engaged by the week, by the meal, or, in public restaurants, *à la carte*.

The prices for table-board alone will range from \$4 to \$8 per week. Satisfactory board can be had in a great many places at \$5 to \$6 per week. Members of the School wishing to practise strict economy may be accommodated in a few private houses at \$4 or \$4.50 per week, or may use the "combination meal" plans and lunch rooms of the public restaurants. In many of the lodging-houses arrangements may be made for self-boarding in part, or for taking single meals either by the day or by the week. Higher priced board may be had at a number of places in Cambridge, and there are many Boston hotels and restaurants which may be reached by trolley in twenty to thirty minutes from Harvard Square.

Furnished single rooms or suites of rooms may be found in great abundance in private houses and halls in one to ten minutes' walk from the University grounds. The prices for single rooms range from \$1 to \$4 per week, and for suites of rooms from \$2.50 to \$7 per week. Many of the single rooms and suites may be occupied by two persons. The prices quoted here include the care of the furnished room, and light, as well as the use of a bathroom and in most cases a parlor.

Arrangements can be made to secure table-board and rooms in the same house, or to engage rooms in one house and take meals outside.

Furnished apartments and furnished houses may be hired at reasonable rates by those who wish to undertake housekeeping, or by groups of friends who may wish to lodge together.

A list of lodging and boarding houses may be had on application to the Chairman of the Summer School, 4 Lawrence Hall, Harvard University, Cambridge, Mass. (See p. 188.)

It is advisable, in general, to make arrangements for board and room in person, after inspection, and not by letter; and in every case to have a clear understanding with the landlord as to the

length of time for which rooms and board are engaged, whether for the six weeks or less. It is generally understood that accommodations are taken for the full six weeks, unless a distinct contract for a shorter time is made when the rooms and board are engaged.

*The Summer School Office will be open on July 1 from 8 A.M. to 10 P.M.* Arrangements will be made to secure temporary lodgings on July 1, if necessary, for those who reach Cambridge late in the afternoon or before 10 P.M. and have not engaged rooms in advance. Cambridge restaurants close at 7.30 P.M.

The necessary expenses in Cambridge for the six weeks of the Summer School — including tuition fee in one course, registration fee, meals, room, and laundry, but not including travelling expenses, — will vary from \$60 to \$100, according to the course of study taken and the economy of the student. If two courses are taken, the fee for the second course must be added to the above estimate. Eighty dollars for the six weeks may be regarded as a liberal allowance for all the necessary expenses for a single course of study.

## MAIL

Persons expecting to enter the Summer School may have their mail addressed in care of the Chairman of the Summer School, 4 Lawrence Hall, Cambridge, Mass., until they have fixed their Cambridge addresses.

The Cambridge Post Office is near the College Yard. There are four mail deliveries at residences each week-day by the P. O. Department.

To facilitate the delivery of letters or telegrams, Cambridge addresses should be filed promptly at the office of the Summer School.

## REDUCED RAILWAY FARES

The Eastern Canadian, the New England, and the Trunk Line Passenger Associations, — controlling the railway lines throughout eastern Canada, New England, New York State, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, western Virginia, and West Virginia, — have granted a reduced fare to mem-

bers of the Harvard Summer School who comply with the prescribed conditions stated below.

The reduction amounts to two-thirds of the cost of the return ticket from Boston to the point within the territory above-named whence the student comes.

Members of the School from more distant points are able to save a substantial part of their travelling expenses by purchasing a local ticket to some important station within the territory above specified, and there making arrangements for a reduced rate on the return trip. Such stations are Washington, D. C., Baltimore, Md., Charleston and Wheeling, W. Va., Pittsburg, Erie, and Philadelphia, Pa., Bellaire, O., Buffalo, Niagara Falls, Suspension Bridge, Rochester, Watertown, Ogdensburg, Albany, and New York, N. Y., etc.

The rate charged is *full fare going*, and *one-third the regular fare returning*.

The passenger should purchase a through ticket to Boston, paying full fare therefor, and ask for either the Eastern Canadian, the New England, or the Trunk Line Association Certificate at the time the ticket is purchased. This Certificate must be deposited for validation with the Chairman of the Summer School immediately after reaching Cambridge. A fee of twenty-five cents is charged by the Passenger Associations for the validation.

The ticket should be bought and the Certificate secured *at least thirty minutes* before the scheduled time of departure of the train.

Going tickets must be purchased between June 27 and July 3, inclusive. The return journey must be made on or before August 15, 1908.

No reduction is allowed on the homeward fare unless the going fare amounts to seventy-five cents or over.

The return journey must be over the same route as the going trip, and no stop-over is allowed.

The Certificate is not transferable.

All students who can conveniently use this method of reducing travelling expenses are urged to do so. The success of the plan this year and the possibility of securing the reduction in future years depend on the number of persons using it. *No reduction will be allowed unless one hundred or more certificates are presented for validation.*



Members of the Summer School who reside near enough to Cambridge to return home each day are advised to inquire of their local ticket agent about special student rates, or commutation tickets, or fifty-ride tickets.

Students from the Pacific Coast States are advised to inquire about the "Nine Months Tourists' Rates" and other opportunities for securing reduced round trip tickets to eastern points.

All students who find it convenient to come to Boston *via* Cleveland, O., may take advantage of such reduced railway rates as may be granted to members of the National Educational Association, which meets in Cleveland on June 29th.

Students from the Central and Western states can use the reduced rate for the N. E. A. meeting between their home station and Cleveland, Ohio, then a local ticket between Cleveland and Erie, Pa. (or between Cleveland and Buffalo or Niagara Falls, N.Y.) and then arrange for the reduced rate by complying with the above conditions and securing the *Trunk Line Association Certificate* for the trip between Erie, Buffalo, or Niagara Falls, and Boston.

Students from all sections of the country are advised to inquire of their local passenger agents concerning reduced rates which may be granted to societies meeting in Boston or vicinity about July 1st; or special tourists' rates to persons visiting summer resorts on the New England coast or in the White Mountains. (See pp. 186-187.)

## HISTORICAL EXCURSIONS AND EVENING EXERCISES

A series of excursions for members of the Summer School, under the management of experienced guides and historical students, will be conducted on Wednesday afternoons and Saturdays to places of historic interest in the vicinity of Cambridge, — including Old Boston, Bunker Hill, Lexington, Concord, Marblehead, Haverhill, Amesbury, Plymouth, Salem, and Danvers. Within the city limits of Cambridge may be seen the Washington Elm and Headquarters, where Washington first took command of the American Army, July 3, 1775; the "Bishop's Palace"; the site of the Oliver Wendell Holmes House; Christ Church and the old burial ground; "Tory Row"; the Longfellow and Lowell houses; the Mt. Auburn Cemetery, and other points of personal or historic interest. (For details see page 95.)

A course of evening lectures and readings from English and American literature will be provided, without charge, for members of the Summer School; and special afternoon and evening lectures, on important topics of interest to members of the Summer School, will be given. Informal receptions will be held in the Hemenway Gymnasium and in Phillips Brooks House for the promotion of mutual acquaintance and friendship.

## RECREATION

The opportunities for wholesome recreation in the afternoons, evenings, and Saturdays, are abundant. The University tennis courts are kept in order throughout the summer. One of the University boat-houses on the Charles River is open to members of the Summer School for a small fee which entitles the student to his choice from a variety of boats for rowing on the Charles River Basin within half a mile of the University Grounds.

A labyrinth of trolley-car lines, radiating from Boston and Cambridge, affords unrivalled opportunities for pleasant excursions to hills, forests, parks, rivers, lakes, and the seaside. Some of the inland places which may be thus visited in an afternoon excursion are the Middlesex Fells, Spot Pond, Arlington Heights, Mystic Lake, Lexington, Concord, the Wayside Inn, Fresh Pond, Waverley Oaks, Norumbega Park, Wellesley Hills, Echo Bridge, the Riverside Boat Club, the Dedham Boat Club, Chestnut Hill, Franklin Park, Blue Hill Reservation, etc.; and among seaside places which may be reached by trolley are Salem, Gloucester, Marblehead, Swampscott, Lynn, Revere Beach, Winthrop Beach, City Point Beach, etc.

Boat lines in daily and hourly operation offer delightful sails in Boston Harbor and Boston Bay, — to Nantasket Beach, Plymouth, Provincetown, Winthrop, Hingham, Pemberton, Bass Point, Nahant, Lynn, Salem, Marblehead, Gloucester, etc. Boats are run daily in the summer to the fishing grounds outside Boston Harbor.

Sea bathing may be had (within easy reach by trolley or railway or boat) at the Cambridge bathing beach, the City Point (Boston) bathing beach, and at the Metropolitan Park Reservations on Revere Beach and Nantasket Beach.

Arrangements for private swimming lessons in the fresh water pool of the Sargent Gymnasium, or at the seaside, may be made with competent instructors.

Lists of the many summer resorts along the coast, by the lakes, on the rivers, and in the mountains, of New England and Canada will be provided at the office of the Summer School for members who wish to visit these resorts at the close of the session.

### LIBRARIES, MUSEUMS, ETC.

During the session of the Summer School the College Library, in Gore Hall — containing 478,600 bound volumes, 331,000 pamphlets, a collection of maps numbering 25,200 sheets, and a large collection of coins — will be open every week-day except Saturday from 9 A.M. till 5.30 P.M. On Saturday it is open from 9 A.M. till 1 P.M. Members of the Summer School may use books in the Library without charge; but a temporary deposit of \$10 is required of all who wish to withdraw books for home use.

In addition, a Text Book Library in Lawrence Hall, containing a large number of text books for comparative study, will be accessible to all members of the Summer School without charge. It will be open every week-day, except Saturday, from 9 A.M. till 12 M., and from 1 P.M. till 4 P.M. On Saturday it will be open from 9 A.M. till 12 M. The separate Libraries of the Departments of Chemistry, Physics, Botany, History, Philosophy, Fine Arts, Education, Architecture, etc., may be used by qualified students in these Departments.

The Libraries of the Harvard Divinity School, Medical School, Law School, and Dental School may be consulted by those desiring to pursue researches in them, by special arrangement.

The Boston Public Library — which is one of the largest and best stocked in the country — the Cambridge Public Library, the Libraries of the Massachusetts Historical Society, of the New England Genealogical Society, and of many other institutions in Boston, Cambridge, and vicinity, afford unusual opportunities for special research, and are conveniently accessible to members of the Summer School.

Among the University Museums may be named the following: The Museum of Comparative Zoölogy — containing various systematic collections of the fauna of the principal countries of the world, and special collections of Quaternary, Tertiary, Mesozoic, and Palaeozoic fossils; the Botanical Museum — containing the Ware Collection of glass models of flowers, and collections designed to illustrate the principal systematic, biological, and economic relations of plants; the Mineralogical Museum — containing collections of meteorites, agates, and large systematic collections of minerals; the Geological Museum; the Peabody Museum of Archaeology and Ethnology; the Semitic Museum; the Fogg Art Museum; the Germanic Museum; the Social Museum; the Warren Anatomical Museum of the Harvard Medical School; the Dental Museum of the Harvard Dental School; and the Arnold Arboretum and Museum — all of which are accessible to interested members of the Summer School. Many of them are open every week-day and may be visited freely.

Other important museums in Boston or vicinity are the Boston Museum of Fine Arts, the Museum of Natural History, the U. S. Naval Lyceum and Museum, and the Barnum Museum of Natural History. These are freely open to the public at specified hours.

The Harvard Astronomical Observatory and the Gray Herbarium may be consulted by qualified persons. The Harvard Botanical Garden is freely open to the public every day of the week.

Among the laboratories of the University open to members of the Summer School are: The Chemical Laboratory in Boylston Hall, the Physical Laboratory in Jefferson Hall, the Psychological Laboratory in Emerson Hall, the Students' Astronomical Laboratory on Jarvis Street, the Botanical Laboratory in the University Museum, and the Drawing Rooms of the Department of Architecture and Design in Robinson Hall. The Laboratories are thoroughly equipped for their purposes and are liberally used for instruction in the Summer School.

The University Reading Room in the General Library in Gore Hall will be open to all members of the Summer School during the hours when the Library is open. It is abundantly supplied with encyclopaedias, dictionaries, indexes, hand-books, reference books, etc.; and contains all important current and bound periodicals.



Ample provision is made for writing and study in this room, affording a quiet place where members of the Summer School may work at their convenience.

Departmental Reading Rooms will be open for study at convenient hours, — in Harvard Hall for students in History, Government, and Economics, — in Emerson Hall for students in Philosophy, Psychology, Ethics, and Metaphysics, — in Robinson Hall for students in Architecture, Design, and Art, — in Boylston Hall for students in Chemistry, — in the Peabody Museum for students in Anthropology, — in Lawrence Hall for students in Education, — and in Holden Chapel for students in Music.

The large parlor in Phillips Brooks House will be open each week-day for all members of the Summer School as a place for social gathering and conversation. Rest rooms and a writing room in the same house will be reserved for the women members of the Summer School.

## THE HARVARD TEACHERS' ASSOCIATION

Members of the Harvard Summer School are eligible for membership in the Harvard Teachers' Association. This Association meets annually at the University in March. Its proceedings are published and distributed to members in May of each year. All members of the Summer School who wish further information about this Association are invited to correspond with the Secretary, Professor PAUL H. HANUS, 15 Phillips Place, Cambridge, Mass.

## THE HARVARD SUMMER SCHOOL ASSOCIATION

*(The following account of the Harvard Summer School Association has been prepared by the Secretary-Treasurer, and is gladly inserted here for the information of members of the Summer School.)*

As the Harvard Summer School has been growing in numbers and broadening its scope and its social interests, an increasing need has been felt for a closer union of the students, and for more active coöperation between the student body and the officers of the School. The increase of administrative duties has made it more and more

difficult for the Committee of the Faculty in charge of the Summer School to get in touch with the students, and to draw them within the circle of sympathetic helpfulness which is one of the finest characteristics of the School; and the students, on their part, have lacked an organization when concerted action was necessary or desirable, — as, for instance, when those students who knew of the devotion of Professor Shaler to the School which he had built up and for so many years directed, wished to give some public expression to their appreciation of his work. When, therefore, the formation of a Harvard Summer School Association was suggested, late in the session of 1907, the response was so quick and enthusiastic that a meeting of students was called to consider such an organization.

In response to the call, representatives from nineteen states gathered in the Fogg Lecture Room on the evening of August 7; and after a brief discussion agreed that an association of Harvard Summer School Students would promote good fellowship and mutual helpfulness in the student body, would be of use in presenting the needs and wishes of the students to the Faculty, and would assist in making more widely known the opportunities for study and recreation afforded by the School. It was then unanimously voted, — “That we proceed to the formation of a Harvard Summer School Association,” and a President, Vice-President, Secretary-Treasurer, and eight additional members were elected as an Executive Committee. On the following day, August 8, the Executive Committee discussed plans for the next year’s session and adopted the following constitution: —

*First.* — Any person who is or has been a member, either as student or as instructor or other officer, of the Harvard Summer School of Arts and Sciences, is, *ipso facto*, a member of the Harvard Summer School Association.

*Second.* — The object of this Association is to promote the interests and welfare of the Harvard Summer School and of its members.

*Third.* — The officers of the Association shall be a President, one Vice-President, a Secretary-Treasurer, and an Executive Committee consisting of the foregoing officers, the Chairman of the Summer School Committee, and seven other members; and a

Representative Committee chosen from the members of the Summer School on the basis of not less than one representative for each twenty members, or fractional part thereof, from each of the several states, provinces, territories, or countries represented in the Summer School.

*Fourth.* — All the foregoing officers shall be chosen each year at the Annual Meeting from among the members of the Summer School of that year. The member or members of the Representative Committee chosen from any particular State may be nominated by the members of the Summer School who reside in that State. Vacancies occurring during the year shall be filled by the Executive Committee.

*Fifth.* — The Annual Meeting shall be held in Cambridge on the evening of the Monday following the opening of the Summer School.

*Sixth.* — For convenience in the transaction of the business of the Association, a majority of the Executive Committee shall be selected from the members of the Association residing near Harvard College.

*Seventh.* — The Executive Committee shall determine all details concerning the Annual Meeting, and have general charge of the affairs of the Association.

*Eighth.* — No dues and no assessments shall be required.

*Ninth.* — These regulations may be amended by a two-thirds vote of the members present at any Annual Meeting.

The officers of the Harvard Summer School Association for 1907-08 are: —

WALTER D. HEAD, *President*,

Phillips Exeter Academy, Exeter, N. H.

ALLEN H. KNAPP, *Vice-President*,

Springfield High School, Springfield, Mass.

FLORENCE E. LEADBETTER, *Secretary-Treasurer*,

Roxbury High School, Roxbury, Mass.

*Executive Committee*

ELEANOR M. COLLETON, Paul Revere School, Boston, Mass.

MAUD G. LEADBETTER, Roxbury High School, Roxbury, Mass.

JAMES L. LOVE, Harvard University, Cambridge, Mass.

EDGAR L. RAUB, John A. Andrew School, Boston, Mass.

SETH SEARS, Franklin School, Boston, Mass.

WILLIAM B. SNOW, English High School, Boston, Mass.

ALFRED R. WINTER, Washington Grammar School, Medford  
Mass.

MARY E. WYNNE, Girls' High School, Boston, Mass.

## FINAL EXAMINATIONS

In courses that meet for lectures at 9 A.M., the final examinations will be held on

TUESDAY, August 11, at 9 A.M.;

and in courses that meet for lectures at 11 A.M., the final examinations will be held on

WEDNESDAY, August 12, at 9 A.M.

In courses that meet for lectures at other hours than 9 or 11 A.M., the final examinations will be held on August 11 or 12 at hours to be determined by the Instructors after consultation with their classes.

No written examination shall exceed three hours in length.



## COURSES OF INSTRUCTION.

---

**ALGEBRA.** (See page 100.)

**AMERICAN HISTORY.** (See page 89.)

**ANALYTIC GEOMETRY.** (See page 101.)

**ANCIENT ART.** (See page 78.)

**ANGLO-SAXON.** (See page 68.)

---

### ANTHROPOLOGY.

ALFRED MARSTON TOZZER, Ph.D., *Instructor in Central American Archaeology.*

One course in Anthropology will be given in the Peabody Museum of Harvard University, beginning Wednesday, July 1, and ending August 12.

#### S1. INTRODUCTORY COURSE IN ANTHROPOLOGY.

The course is designed for those wishing to obtain a general knowledge of the whole field of Anthropology.

The following topics will be considered:—

1. Anthropology and its place among the Sciences.
2. An outline of the physical character of man, his origin, his relation to the anthropoid apes, his division into races and varieties, and the physical criteria of race and sex. Criminal Anthropology.
3. The distribution of man from geological to historical times, the archaeology of Europe and America in the stone and metal ages. The earliest migrations of European populations. The peopling of America.
4. Under the general subject of Ethnology the following divisions will be made.

(a) The utilitarian and esthetic arts among primitive peoples; the aspects of material culture on the one hand, such as food supply and agriculture, fire making, domestication of animals, architecture, dress, ceramics, weapons, and utensils; and on the other, painting, sculpture and decoration, music, and dancing.

(b) The sociology of primitive peoples, including the study of the origin of the family and tribe; marriage, government, law, property, and ethical standards; commerce, and warfare.

(c) Religion: the origin and growth of the religious idea; Animism, Fetichism, and Shamanism; personal, family and tribal religion; priesthood, ceremonials, and mortuary customs; Mythology and Folk-Lore.

(d) Language: its origin and characteristics among uncultured people.

In addition to the lectures, there will be numerous conferences on the work of the course. The Anthropological Library in the Peabody Museum, containing 3,422 volumes and 2,908 pamphlets, is open to members of the Summer Class. The extensive and varied collections of the Peabody Museum of Archaeology and Ethnology are used for purposes of illustration in connection with the lectures. Special attention will be paid to the bibliography of the subjects taken up in the course. A printed syllabus giving the required reading and a full outline of the lectures is available.

This course is an abbreviation of Anthropology 1 as given during the college year, and is accepted as a half-course for a degree of A.B. or of S.B. in Harvard University. (See page 15.)

*The course will meet for at least one hour five times a week for six weeks at 9 A.M., in the Peabody Museum, Room 50.*

The fee for the course is \$25. (See pages 19-20.)

For further information, address the Instructor, Dr. ALFRED M. TOZZER, 20 Holworthy Hall, Cambridge, Mass.

---

**ARCHAEOLOGY.** (See page 78.)

**ARCHITECTURE.** (See pages 71-74.)

**ART.** (See pages 71-78.)

---

### **ASTRONOMY.**

WILLIAM CHARLES BRENKE, Ph.D., *Adjunct Professor of Mathematics (University of Nebraska), formerly Assistant in Astronomy, Harvard University.*

One course in Astronomy will be given in the Astronomical Laboratory of Harvard University, beginning Wednesday, July 1, and ending August 12.

## S1. DESCRIPTIVE AND OBSERVATIONAL ASTRONOMY.

This course covers the ground of the laboratory examination in the requirements for admission to Harvard College. The instruction will be given by Professor W. C. BRENKE.

In this course some attention will be given to purely Descriptive Astronomy, but the time will be devoted mainly to laboratory and observational work, including that required for admission to Harvard College. A part of the observations will require attendance in the early evening hours.

Emphasis will be laid on methods of observation which may be profitably introduced into the teaching of elementary astronomy in the secondary schools, and on the means of providing simple apparatus to that end.

The programme contains exercises which are intended to make the student familiar with the more conspicuous stars and constellations. The diurnal motion of the heavens and the motions of the sun and moon will be investigated by each student from his own observations. The changes of the planets in the short space of six weeks are too small to give valuable results, but methods will be shown by which observations with very simple means, continued for a sufficient interval, will explain these apparently erratic motions.

An exceptionally good equatorial telescope of  $7\frac{1}{2}$  inches aperture made by Alvan Clark and Sons will be used for studying sun-spots, the moon, and other interesting objects. Students who show themselves competent will be given an opportunity to become familiar with this instrument.

To any who may desire to do work in addition to that of the regular programme some opportunity will be given to use the more accurate instruments of the Laboratory.

A good reference library of astronomical books is accessible to members of the class.

This course is the equivalent of Astronomy 1 of the Harvard Courses of Instruction; and is accepted in lieu of the examination in Astronomy for admission to Harvard or Radcliffe College. It is accepted, also, as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet for an hour and a half five times a week for six weeks in the Astronomical Laboratory, Jarvis St., Cambridge, at 9 A.M.*

The fee for the course is \$30. (See pages 19-20.)

For further information concerning this course address Professor R. W. WILLSON, 64 Brattle St., Cambridge, Mass.

---

## BOTANY.

MINTIN ASBURY CHRYSLER, Ph.D., *Associate Professor of Botany (University of Maine), formerly Instructor in Botany, Harvard University.*

ROBERT BOYD THOMSON, A.B., *Instructor in Botany.*

Two courses in Botany will be given in the Botanical Laboratories of Harvard University at the University Museum, both beginning Wednesday, July 1, and ending August 12.

### S1. INTRODUCTORY COURSE: THE STRUCTURE, PHYSIOLOGY, AND ÆCOLOGY OF FLOWERING PLANTS.

This is a first course in botany for college students, teachers, and anyone who may desire a knowledge of the fundamental principles of the science as part of a liberal education. The course aims to give insight into the life of plants,—their response to external influences, their nutrition, assimilation, respiration, growth, dormancy, reproduction, and the common relationship of the groups of flowering plants. The organization of the plant body is studied in relation to plant life. In addition, the chief groups of the higher plants are studied taxonomically in the laboratory and the Botanic Garden. The student may expect to gain some facility in the use of manuals for determining the names of plants. In the laboratory constant practice will be had in the use of the dissecting (simple) microscope; and, to a less extent, practice in the manipulation of the compound microscope. The lectures and assigned readings will cover the principal topics in the general morphology, physiology, and æcology of the higher plants.

*Relation to Teachers.*—While primarily a university course, in which attention is paid to developing the *subject* in hand, rather than the *mode of teaching* it, and therefore in no sense a normal



course, it is yet designed to be especially helpful to teachers of botany. It should meet the needs of teachers who, although they are familiar with much of the ground, desire a more thorough and scientific training than they have received, with increased knowledge and a wider outlook over the whole field, affording fresh points of view. The matter and to some extent, at least as regards laboratory work, the methods deemed essential to botanical instruction in secondary schools will be illustrated. In the lectures special attention will be given to subjects which ordinarily could not be mastered through self-instruction, but which, though they may be somewhat beyond the limits of high school botany, are of much importance to one who would be well equipped for botanical teaching in the secondary school. Several field trips will be made.

The botanical reference library in the University Museum and the large collections and library of the Gray Herbarium are accessible to qualified members of this class.

The laboratory will be open and under the supervision of instructors from nine until one o'clock, five days in the week; probably also on two afternoons.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is the equivalent of Botany 1 of the Harvard Courses of Instruction; and is accepted, also, in lieu of the Elementary Botany of the requirements for admission to Harvard or Radcliffe College. (See page 15.)

Members of the class who wish to count this course as a half-course towards a degree, or who wish the Summer School Certificate, will be required to take an examination. Certificates will be given to all who satisfactorily complete the work.

Gray's *Manual or Field, Forest, and Garden Botany* will be needed in Course S1.

*This class will meet five times a week for six weeks from 9 A.M. until 1 P.M., the lecture being at 10.30 A.M., in the Nash Lecture Room, University Museum. The laboratory work will be done in Room 12, University Museum.*

The fee for the course is \$30. (See pages 19-20.)

For further information address Professor E. C. JEFFREY, 47 Lake View Ave., Cambridge, Mass., or Professor M. A. CHRYSLER, University of Maine, Orono, Me.

## S2. MORPHOLOGY AND ŒCOLOGY OF FLOWERING PLANTS.

This course is designed especially for teachers, and for students who have some familiarity with the subject. It consists of a series of thirty lectures and laboratory exercises.

Beginning with a brief survey of the characters of vegetable cells, the course proceeds to a careful consideration of the minute anatomy and cytology of root, shoot, leaf, and reproductive organs of typical forms of flowering plants, with special reference to the important bearing of the observed facts upon the Physiology, Œcology, and Phylogeny of plants. This is followed by an exact study of the principal Œcological modifications and adaptations found among higher plants. Attention is directed to the importance of these subjects as a broad foundation for the botanical phases of nature study.

Throughout the course constant use is made of compound microscopes, while the lectures are fully illustrated by means of photomicrographs and other lantern slides, charts and living plants. A complete series of illustrative microscope slides is supplied to each student at a merely nominal expense, thus leaving the entire laboratory time free for study and drawing. A few laboratory periods, however, are devoted to general exercises in the preparation of permanent microscope slides, and concise directions are given for the fixing, embedding, sectioning and staining of vegetable tissues; while opportunity is afforded for practical experience in the technique to those students who desire to take up this very important phase of the subject.

The botanical reference library in the University Museum and the large collections and library of the Gray Herbarium are accessible to qualified members of this class.

Each person who completes this course in a satisfactory manner, and passes the examination at its close, is entitled to the Summer School Certificate.

This course is for the most part equivalent to Botany 3a of the Harvard Courses of Instruction, and is accepted as such in the case of students in Forestry. It is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*This class will meet five times a week for six weeks at the University Museum, in Room 11, from 9 A.M. to 1 P.M., Lecture at 9 A.M.*

The fee for the course is \$30. (See pages 19-20.)

For further information address the Instructor, Mr. R. B. THOMSON, 5 Eustis St., Cambridge, Mass.

### CALCULUS. (See page 102.)

### CHEMISTRY.

GREGORY PAUL BAXTER, Ph.D., *Assistant Professor of Chemistry.*

HENRY AUGUSTUS TORREY, Ph.D., *Assistant Professor of Chemistry.*

HARRY LOUIS FREVERT, A.B., *Instructor in Physical Chemistry.*

ARTHUR CLARENCE BOYLSTON, A.M., *Austin Teaching Fellow in Chemistry.*

In the summer of 1908, seven courses in Chemistry will be given in the Chemical Laboratories of Harvard University in Boylston Hall, beginning Wednesday, July 1, and ending Wednesday, August 12.

The laboratories will be open daily from eight until five o'clock, except Saturday when they will be closed at twelve o'clock. Students may work as much as they choose within these limits. Instructors will be in attendance between nine and four o'clock.

Students in Chemistry receive not only the privileges of the main Library, but also those of the Chemical Library in Boylston Hall. The department library is provided with an abundant supply of reference books in all branches of the subject and with full sets of the more important chemical periodicals.

The fee for each of the six courses is \$25, except that in case the laboratory work in any course is omitted, the fee for lectures in that course will be \$15. In addition to the fee for instruction, each student working in the laboratory will be required to deposit \$15 with the Bursar. Of this amount, \$10 covers the cost of materials consumed; the remaining \$5 covers the breakage of apparatus. If the cost of broken apparatus amounts to less than the deposit, the balance will be returned; if the deposit is insufficient to cover breakage, the additional sum will be charged to the student.

## S1. ELEMENTARY THEORETICAL AND DESCRIPTIVE CHEMISTRY.

This course will aim first to teach the fundamental laws and theories of Chemistry through the study of a few common substances, and then will consider the properties of some of the more important elements and their compounds, together with their applications in the arts, in as much detail as time will allow. Particular stress will be laid upon the theoretical side of the subject throughout the course, so that the training will be useful to teachers of Chemistry, especially to those engaged in preparing pupils for college entrance examinations in Chemistry. No previous knowledge of Chemistry is necessary, however.

The work will consist of daily lectures, with laboratory work bearing directly on the subject matter of the lectures. Each student will be expected to spend at least five hours of each week-day (except Saturday) in the laboratory. No text-book will be used.

This course is accepted either as a half-course for the bachelors' degrees in Harvard University, or in lieu of the entrance requirement in Chemistry for admission to Harvard or Radcliffe College. (See page 15.)

A statement concerning libraries, laboratories, fees, and hours may be found on page 38. (See also pages 19-20.)

The class will meet for lectures at 9 A.M., in Room 7, Boylston Hall.

Professor BAXTER will give the lectures and have general charge of the laboratory work. Mr. BOYLSTON will assist him in the laboratory.

Inquiries concerning this course may be addressed to the Instructor, Professor G. P. BAXTER, Boylston Hall, Cambridge, Mass.

## S2. ORGANIC CHEMISTRY.

The course in Organic Chemistry consists partly of lectures and partly of laboratory work. The lectures, which are given daily, present a general survey of the chemistry of the compounds of carbon, in which both theoretical considerations and the practical applications of the subject will be treated. The lectures are illustrated with experiments and specimens. Since so many natural



processes have to do with organic substances, a knowledge of organic chemistry is useful and has become almost indispensable to the biologist, physician, and agriculturist, as well as to the chemist. Furthermore, the importance of organic chemistry in commerce is evident when one considers that the petroleum, soap, sugar, starch, cellulose, fermentation, leather, dyeing, and many other industries, are included within the scope of this subject.

The laboratory work consists chiefly in the preparation of typical members of the more important classes of organic substances, such as the hydrocarbons, alcohols, acids, ethers, esters, amines, amides, artificial dyes, etc. Some time may be devoted, if desired, to the quantitative analysis of organic substances. The laboratory work may be varied somewhat according to the needs of the individual student.

The only requirement for this course is a good knowledge of general inorganic chemistry.

This course is for the most part the equivalent of Chemistry 2 of the Harvard Courses of Instruction, with laboratory work added. It is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

Attention is called to the fact that Organic Chemistry is now required for admission to the Harvard Medical School, and that this requirement may be satisfied by obtaining a satisfactory grade in the course in Organic Chemistry in the Summer School.

A statement concerning libraries, laboratories, fees, and hours may be found on page 38. (See also pages 19-20.)

The class will meet for lectures at 11 A.M. in Room 9, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Professor H. A. TORREY, 15 Boylston Hall, Cambridge, Mass.

### S3. QUALITATIVE ANALYSIS.

A systematic course of analysis will be studied, by means of which the composition of inorganic substances may be determined. At the same time many of the more important properties of the common elements and their compounds will be presented. Instruction will be given partly by lectures, but chiefly in the laboratory, where the greater portion of the work will be performed. The laboratory

work will consist of a study of the more common reactions involved in analytical chemistry, of the analysis of substances of known composition, and finally of the analysis of substances of composition unknown to the student.

Qualitative Analysis is indispensable to students of chemistry and is useful to those engaged in many other kinds of scientific work. This course requires a previous knowledge of elementary descriptive chemistry.

This course is the equivalent of the first half of Chemistry 3 of the Harvard Courses of Instruction, and it is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.) In this case the first half-year of Chemistry 3 in Harvard College may be omitted. If the summer course in Qualitative Analysis is counted for a degree, Chemistry 3 will be allowed to count only as a half-course.

A statement concerning libraries, laboratories, fees, and hours may be found on page 38. (See also pages 19-20.)

The class will meet for lectures at 9 A.M. in Room 9, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Professor H. A. TORREY, 15 Boylston Hall, Cambridge, Mass.

#### S4. QUANTITATIVE ANALYSIS.

In this course, which will consist mainly of laboratory work, the simpler gravimetric and volumetric methods of determining the amounts of each constituent of a substance will be studied. Quantitative Analysis is the foundation of all advanced chemical work and is therefore necessary for those going further in the subject. It also trains the student especially in skill, care, and accuracy in manipulation; and is of value in preparing for any scientific work. Students intending to enter the Harvard Medical School are advised to obtain some training in Quantitative Analysis such as is afforded by this course. A knowledge of Qualitative Analysis is desirable for all students in Quantitative Analysis.

This course is accepted as a half-course for a degree in Harvard University. (See pp. 13-19.) It is not, however, the equivalent of either half of Chemistry 4 in Harvard College, and will not be accepted in Harvard College as sufficient preparation for more advanced work in Chemistry.

A statement concerning libraries, laboratories, fees, and hours may be found on page 38. (See also pages 19-20.)

The class will meet for lectures at 2 P.M. in Room 7, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Professor G. P. BAXTER, Boylston Hall, Cambridge, Mass.

## S6. PHYSICAL CHEMISTRY.

The growing importance of Physical Chemistry is shown by its ability to solve problems not only in physics and chemistry, but also in botany, zoölogy, physiology, geology, and the manufacturing industries. This course is intended especially for teachers of chemistry who have had no opportunity to obtain instruction in this subject, and for students in other fields who desire a knowledge of Physical Chemistry.

Daily lectures will cover, as fully as time will permit, the subjects: gases, liquids, solids, solutions, chemical equilibrium, thermochemistry, and electrochemistry. The various relations of mass, volume, pressure, and temperature, including such topics as the gas laws, the kinetic theory, critical phenomena, molecular volumes, and phase relations, will be considered. Special attention will be given to the theory of solution, including the subjects of osmotic pressure, vapor tension, the dissociation theory, and the properties of ions. In electrochemistry, electrical conductivity and electrical potential will be treated.

The lectures will be supplemented by laboratory work, consisting of the study of physico-chemical methods, to which students will be encouraged to devote as much of their time as possible. The experiments will include the verification of the gas law, determinations of heats of neutralization and solution, determinations of molecular weights by vapor density, boiling point, and freezing point methods, determinations of specific gravities of liquids and solids, measurements of electrical conductivity, electromotive force, adjustment of chemical equilibrium, and velocity of reaction.

Many references will be given for collateral reading, for which the following text-books will be found useful: James Walker, *An Introduction to Physical Chemistry* (Macmillan & Co.); H. C. Jones, *Elements of Physical Chemistry* (Macmillan & Co., 1907); van't Hoff, *Lectures on Physical and Theoretical Chemistry* (E. Arnold,

London); W. Ostwald, *Grundriss der allgemeinen Chemie* (W. Engelmann, Leipzig); Le Blanc, *Electrochemistry* (Macmillan & Co.); Leffeldt, *Electrochemistry*, Part I (Longmans, Green & Co.); A. Finlay, *The Phase Rule* (Longmans, Green & Co.); J. W. Mellor, *Chemical Dynamics and Reactions* (Longmans, Green & Co.); and for the laboratory, W. Ostwald, *Physico-chemical Measurements* (Macmillan & Co.), or Ostwald-Luther, *Physiko-chemische Messungen* (W. Engelmann, Leipzig). These reference books will all be available in the Chemical Library in Boylston Hall.

For the best understanding of the course the student should have a knowledge of descriptive chemistry, elementary quantitative analysis, and organic chemistry, as well as of elementary physics and mathematics (analytical geometry is very desirable). The course will not be deeply mathematical, however. Much attention will be paid to the practical application of the principles involved.

This course is accepted as a half-course for a degree in Harvard University. (See pp. 13-19.) Students who satisfactorily complete this course will be admitted to Chemistry 6 in Harvard College without having taken Chemistry 8, and may also omit the laboratory work in Chemistry 6. Chemistry 6 taken in this way will be allowed to count only as a half-course. Furthermore, no student will be allowed to count both Chemistry 8 and Chemistry S6 for any degree.

A statement concerning libraries, laboratories, fees, and hours may be found on page 38. (See also pages 19-20.)

The class will meet for lectures at 11 A.M. in Room 7, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Mr. H. L. FREVERT, Boylston Hall, Cambridge, Mass.

## S20. RESEARCH.

Facilities for research in Inorganic Chemistry, S20*a*, under the direction of Professor BAXTER, or in Organic Chemistry, S20*b*, under the direction of Professor TORREY, will be afforded to those who desire it and are properly qualified.

Research in either of these courses is accepted as a half-course for a degree in Harvard University. (See pp. 13-19.)

The classes will meet in the Chemical Laboratories in Boylston Hall.



A statement concerning libraries, laboratories, fees, and hours may be found on page 38. (See also pages 19-20.)

For further general information concerning these courses, address Professor G. P. BAXTER, 2 Boylston Hall, Cambridge, Mass.; for special information, address the instructors in charge of courses.

**CIVIL GOVERNMENT.** (See page 91.)

**CLASSICAL ARCHAEOLOGY.** (See page 78.)

### THE CLASSICS.

CHARLES BURTON GULICK, Ph.D., *Assistant Professor of Greek.*

EDWARD KENNARD RAND, Ph.D., *Assistant Professor of Latin.*

ARTHUR STANLEY PEASE, Ph.D., *Instructor in Greek and Latin.*

JAMES SAMUEL MARTIN, A.M., *Assistant in Latin.*

### GREEK.

Two courses in Greek will be given in 1908. The work will begin on Wednesday, July 1, and end on Wednesday, August 12, 1908.

Professor Gulick will give both courses.

#### SG. GREEK FOR BEGINNERS.

This course is designed for persons who have never studied Greek, and who wish to acquire such a knowledge of the essentials as will enable them to begin with some facility the study of the great classical writers. The course may be taken by any teacher or student, but an acquaintance with some other inflected language, like Latin or German, will prove advantageous. The needs of students in modern languages, history, and theology will be kept primarily in view; but attention will also be paid to the use of Greek in modern scientific nomenclature, so that students of the sciences as well will find the course useful. The first four weeks will be devoted to a study of the elements of the language, and to readings and translations by the instructor; during the last two weeks, students will be expected to prepare assigned lessons in Marchant's *Greek Reader* (English translation of Wilamowitz's *Griechisches Lesebuch*), or in some Greek author like Xenophon. Thoroughness and accuracy will necessarily be required, as affording the only sure basis for profitable reading later; but the

instructor will aim to impart the spirit of the Greek classics rather than a technical knowledge of forms and syntax.

*Text-books.* — White's *First Greek Book* (Ginn & Co., \$1.25); Macmillan's *Greek Reader*, by F. H. Colson (The Macmillan Co., \$.75); E. C. Marchant, *Greek Reader*, Vol. I (Oxford, Clarendon Press, 2 shillings).

*The class will meet for at least one hour five times a week for six weeks at 10 A.M., in Sever 29.*

The fee for this course is \$20. (See pages 19–20.)

For further information address the Instructor, Professor C. B. GULICK, 59 Fayerweather Street, Cambridge, Mass.

## S10. THE LIFE OF THE ANCIENT GREEKS.

Selected topics in Greek private life from the Homeric Age to the fourth century B.C. will be the theme of the lectures in this course. The instructor will treat systematically the known facts relating to Greek education; military antiquities; customs at birth, death, and marriage; the life of the citizen; the professions; and then in general, so far as the time permits, the background of Greek literature, especially of Homer and Xenophon, the authors most read in school. Both these authors and the monuments of art, such as sculpture and vase-paintings, will be constantly used as authorities and in illustration of the facts set forth. Through the use of the lantern and of photographs, as well as actual memorials of Greek life in the Fogg Museum and the Boston Museum of Fine Arts, the student will be encouraged to realize and vivify the setting of the ancient authors.

The course is intended chiefly for teachers, but others may be admitted on consultation with the instructor. No knowledge of Greek is required. The course is accepted as a half-course for a degree in Harvard University. (See pages 13–19.)

*Text-books.* — No text-books are required, but the student may find it helpful to refer to the Instructor's *Life of the Ancient Athenians* (D. Appleton & Co., \$1.40).

*The class will meet for one hour five times a week for six weeks at 9 A.M., in Fogg Lecture Room.*

The fee for this course is \$25. (See pages 19–20.)

For further information address the Instructor, Professor C. B. GULICK, 59 Fayerweather Street, Cambridge, Mass.

## LATIN.

Two courses in Latin will be given in 1908, beginning Wednesday, July 1, and ending Wednesday, August 12. Course *SA* will be given by Dr. PEASE and Course *SD* by Professor RAND.

### SA. COURSE IN LATIN FOR TEACHERS.

This course considers in detail the various requirements in the Harvard Entrance Examination in Latin, in such a way as to give also a general survey of the work of a teacher of elementary and advanced Latin in the secondary schools. The instructor aims both to furnish useful material and to suggest desirable methods for teaching.

The course will follow the four years of the school programme, considering, first, Beginners' Books in Latin, and then the authors mentioned in the Harvard requirements — Nepos, Caesar, Ovid, Cicero, Virgil. Lectures will be given from time to time on various matters in grammar, such as the pronunciation of the language, the formation of words, the syntax of the moods and of the cases. Typical selections will be read from the different authors, accompanied by brief lectures on the life and times of each of them, on their significance in literature, and on the best method of presenting their works in the schools. There will be constant practice in recitation, in which particular attention will be paid to the intelligent reading of the language, especially of Latin verse; to translation of prepared work, and translation at sight; to written translations which will be carefully criticised as exercises in English composition; to important questions of grammar and style, and to interesting features of ancient life suggested by the subject-matter. Weekly exercises in Latin composition will form part of the work. Helpful bibliographies will be furnished, both of general works and of special books relating to the authors.

The object of the course, then, is first of all to treat in detail the Harvard entrance requirements in Latin and the best methods of preparing for them, but, further, to discuss the school programme as a whole, to enlarge the teacher's acquaintance both with the authors and with important matters in Latin grammar and Latin literature of immediate significance for his work, and, finally, to suggest suitable methods of presentation.

The prescribed reading will include Caesar's *Bellum Gallicum*, vii; the following myths from Ovid's *Metamorphoses*: *Deucalion*, *Daphne*, *Phaëthon*, *Pyramus*, *Perseus*, *Meleager*, *Philemon*, *Alcyone*, and *Galatea*; Cicero, *Pro Lege Manilia*; Virgil, selections from the *Aeneid*, *Eclogues*, and *Georgics*.

*Text-books.*—Each student will need a complete text of Virgil, Caesar's *Bellum Gallicum*, and Ovid's *Metamorphoses*, and some edition of Cicero's orations which contains the speech *Pro Lege Manilia*. These and other necessary books will be announced at the opening of the course and can be obtained in Cambridge. The most important Beginners' Books in Latin and school editions of the authors will be exhibited and discussed in class.

*The class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 18.*

The fee for this course is \$20. (See pages 19–20.)

For further information address the Instructor, DR. A. S. PEASE, 61 Sparks Street, Cambridge, Mass.

#### SD. THE ROMAN POETS AND THEIR INFLUENCE ON LITERATURE.

This course will be conducted on the plan explained in the statement of Course B. (See page 48.) A large number of selections from the Roman poets will be read, translated, and discussed in such a way as to present in outline the history of Latin poetry. The translations will generally be written, and will be criticized also as exercises in English. The instructor will lecture from time to time on various aspects of Latin poetry, on the periods in its development, on metres, on the lives of the poets, their relation to their Greek models and their influence on later literature. While attention will be centred mainly on the classical poets from Ennius through Juvenal, the lecturer will also trace the development of Latin poetry in the later Empire, and consider briefly some of the varieties of mediaeval verse.

Course D is not an elementary course: members should already have some acquaintance with Latin poetry—certainly with the poems and the metres of Virgil, Ovid, and Horace.

*Text-books.*—Members of this course should be provided with the following books: F. St. J. Thackeray, *Anthologia Latina* (London,



George Bell & Sons); R. Y. Tyrrell, *Anthology of Latin Poetry* (Macmillan, N. Y.); *Selections from Latin Poets* (Harvard University). All of these books may be bought at the store of the Harvard Coöperative Society.

For collateral reading, J. W. Machail, *Latin Literature*, and W. Y. Sellar, *The Roman Poets of the Republic*, and *The Roman Poets of the Augustan Age* will be prescribed, and members of the course are urged, but not required, to own these books; these and other works on Latin poetry will be reserved in the College Library for the use of the class. The Library's ample collections of editions and illustrative works will be at the disposal of members of the course.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13-19.)

*The class will meet for at least one hour five times a week at 9 A.M., in Sever 18.*

The fee for this course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor E. K. RAND, 107 Lake View Avenue, Cambridge, Mass.

## SB. THE LIFE AND WORKS OF VIRGIL.

*This course will not be given in 1908.*

[This course has a two-fold object: it aims not only to equip the teacher of Virgil in the secondary school with the information indispensable for his immediate purpose, but also to present with some detail the larger bearings of his subject in its relations to classical and modern literature.

The majority of the meetings will be devoted to the reading, translation and discussion of illustrative selections from the works of Virgil. The larger part of the *Eclogues* and the *Georgics* will be read; the first four books of the *Aeneid* will be made the subject of special study, with reference to the new admission requirements for Harvard College. Books of the *Aeneid* will be assigned for special reports; if time permits, one or more of the shorter poems attributed to Virgil will be read. The purpose of these readings is to furnish the teacher an adequate conception of the entire body of Virgil's works, as well as to give practice in the correct reading of the Latin hexameter and in the translation of Latin poetry into appropriate English. The translations will be made sometimes by the

instructor, sometimes by the members of the course, and generally will be written.

In addition to these readings and translations there will be lectures on various subjects of importance relating to Virgil, such as the life and times of Virgil; his place in the history of Epic, Didactic, and Pastoral Poetry; literary criticism of Virgil in antiquity; the transmission of Virgil's poems in the Middle Ages; the mediaeval conception of Virgil; and his influence on the poetry of the Renaissance and modern times. At the first meeting of the course a select bibliography of Virgil will be given, and the principal editions and English translations will be discussed.

This is in no sense an elementary course; members should already have a general acquaintance with Virgil, and have read a considerable portion of his works.

*Text-books.*—Members of the course should be provided with a text of Virgil containing the complete works, such as Ribbeck's smaller edition, published by Teubner, Leipzig. It may be had at the store of the Harvard Coöperative Society. There are in the Harvard College Library rich collections of books on Virgil which will be at the disposal of the members of the course.]

**DESIGN.** (See page 74).

**DIFFERENTIAL CALCULUS.** (See page 102.)

**DRAWING AND PAINTING.** (See page 76.)

## EDUCATION.

**EDWARD OCTAVIUS SISSON**, Ph.D., *Director of the Department of Education in the University of Washington.*

**FRANK ELLSWORTH SPAULDING**, Ph.D., *Superintendent of Schools, Newton, Mass.*

**JAMES SULLIVAN**, Ph.D., *Principal of Boys' High School, Brooklyn, N.Y.*

**GEORGE WILLIAM EVANS**, A.B., *Teacher of Mathematics, and Principal, Charlestown High School, Charlestown, Mass.*

Five courses are offered in 1908, beginning Wednesday, July 1, and ending Wednesday, August 12, as follows:—

S1. The History of Modern Education.

S2. Principles of Education.

S3. The Organization and Administration of Schools and School Systems.

S10*d*. The Equipment of the History Teacher, and Methods of Teaching History.

S10*e*. The Methods and Equipment of a Teacher of Mathematics.

*The attention of teachers interested in courses treating college admission subjects, in many cases mainly from the point of view of the teacher, is called to the following courses:—*

Astronomy (p. 33); Botany (p. 35); Chemistry (p. 39); Greek (p. 44); Latin (p. 46); English (p. 67); German (p. 83); History (pp. 85–90); Civil Government (p. 91); Mathematics (pp. 99–101); Harmony and Counterpoint (p. 103); Physics (pp. 127–131); French (p. 136); and Spanish (p. 138).

Detailed descriptions of these courses are given below.

The fee for each course is \$20. (See pages 19–20.)

A considerable amount of written work, in addition to prescribed reading, is required of Students who are candidates for the Summer School Certificate. Students will have an opportunity, under the general direction of the instructors, to prepare written theses and discuss topics in which they are especially interested; and advanced students may be invited to present their theses for discussion at conferences to be arranged.

The GENERAL LIBRARY of the University will be in constant use, and in the READING-ROOM will be found a group of books on Education arranged for the convenience of students.

The attention of members of these courses is also called to the library of the Department of Education in Lawrence Hall. Besides books on Education, this library contains a collection of more than 5,000 recent text-books and reference-books, issued and contributed by leading publishers. It will be open daily from 9 A.M. till 12 M., and, except on Saturdays, from 1 till 4 P.M.

## S1. THE HISTORY OF MODERN EDUCATION.

This course is intended (*a*) to meet the need of students who desire professional training, and (*b*) to provide opportunities for advanced study to teachers of the history of education in normal schools and colleges. For the latter group of students, and others

who may desire them, conferences will be arranged on the selection of topics and text-books, and the ways of teaching the subject. Students who complete the work should be able to prepare themselves easily for City and State examinations in the History of Education.

The course aims to furnish a general view of the period from the later Renaissance to the nineteenth century, inclusive, and to give such information and insight as will enable the student to pursue his further study of the subject more effectively.

The course will be introduced by a brief discussion of the contributions to modern educational theory and practice of the Greek and Roman and mediaeval writers and teachers. The chief emphasis will be placed upon the rise of democracy as affecting education, and the resulting changes in aims, content, and methods.

Attention will be given both to theory and to institutions; effort will be made to present education as an organic part of general human progress, in constant causal relation with other parts of the process.

The work will consist of lectures, discussions, reading, and reports on special topics by members of the class. Students are advised to bring with them such reference books as they own or can obtain for the summer; works on the general history of the period are included in this recommendation.

The following topics indicate the general character of the work: —

1. The Renaissance: its character and educational influence in Italy, Germany, and England. Humanism and humanistic schools in their various phases; the origin and development of the modern humanistic secondary school.
2. Religious movements of the sixteenth and seventeenth centuries: the Reformation and the Counter-Reformation; their relation to the Renaissance and to Humanism; their influence upon popular education. Protestant schools and teachers; Catholic teaching congregations.
3. The advancement of modern learning; its influence upon educational theory and practice. Bacon, Comenius, Locke; the development of modern studies and programmes of study.
4. Important theories of education in the eighteenth and nineteenth centuries. Rousseau, the Philanthropinists, Pestalozzi, Froebel, Herbart, Spencer. Applications of psychology to teaching; the "science of education."



5. The State and education in the eighteenth and nineteenth centuries; some aspects of the school systems of Germany, France, the United States, and England; universal education; compulsory school attendance. The relation of education to industry and citizenship. Widespread interest in education, and attention to its problems.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13-19.)

*This class will meet for at least one hour five times a week for six weeks at 11 A.M., in Lawrence 7.*

The fee for the course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor E. O. Sisson, University of Washington, Olympia, Washington.

## S2. PRINCIPLES OF EDUCATION.

This course aims to present a general introduction to educational theory. The work consists of lectures, discussions, reading, and oral and written reports by members of the class on assigned topics. No single text-book will be used, but a number of the best recent books will be referred to, and students are advised to bring with them such books as they have found of value, including a good text-book on psychology. All the books referred to by the Instructor will be found in the Department Library, or in the University Library in Gore Hall.

The following topics indicate the general character of the work: —

1. The auxiliary sciences of education: psychology, descriptive, genetic, and experimental; ethics, and sociology; economics; physiology and hygiene.
2. The nature and development of the child in relation to education. Bodily and mental growth; especially native reactions, instincts, sense development, suggestibility; general and individual potentialities of children, physical, intellectual, constructive, aesthetic, volitional.
3. Ideals of individual and social character as determining the aim of education; physical and mental powers and capacities; aesthetic development.
4. Educative agencies; home, school, church, social life, vocation; the State and education.

5. The special function and method of the school;—courses of study and educational values; methods of discipline and instruction; organization and management.
6. Educative processes: experience, example, instruction, training.
7. Physical education: its true place and value; methods, dangers of defect and excess.
8. The education of the will as ultimate end and as resultant of other processes.
9. The teacher: his preparation, social and economic status as affecting the efficiency of the school; the teacher as private individual and citizen.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13–19.)

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Lawrence 7.*

The fee for the course is \$20. (See pages 19–20).

For further information concerning this course, address Professor E. O. Sisson, The University of Washington, Olympia, Washington.

### S3. ORGANIZATION AND ADMINISTRATION OF SCHOOLS AND SCHOOL SYSTEMS.

This course is intended primarily for superintendents of schools, for principals of high and elementary schools, and for teachers of experience who desire to study school organization and administration with a view to becoming principals or superintendents.

For teachers who do not expect to become principals or superintendents the course will be of value in giving them an appreciative understanding of the difficulties of administration, making clear their own proper relations to the general plan, and enabling them to do more harmoniously and effectively the particular work assigned them. It is hoped that the course will also meet the needs of school officials and other mature students who are not teachers or supervisors, but who may wish to study the organization and administration of educational activity as a branch of municipal affairs.

The course will comprise:—

- I. A brief consideration of the problem of public education, for the purpose of outlining a definite educational policy.

II. A detailed study of school organization, administration, and supervision, as the means through which it is sought to carry out the public educational policy. This study will deal with the following principal topics : —

1. Units of administration and their relations to each other; the city, town, district, county, and State.
2. Finances: source and amount; expenditures—for permanent plant, current miscellaneous expenses, salaries; control of finances.
3. The school plant: buildings, grounds, permanent equipment.
4. The school board: elected or appointed; size; functions; relations to community and the schools.
5. The superintendent: qualifications, appointment, tenure; duties and opportunities; relations to public, school board, assistant superintendents, supervisors, principals, teachers, and pupils.
6. Principals: qualifications, duties, and relations.
7. Supervisors and special teachers: their functions and relations.
8. Teachers: qualifications; examination and certification; appointment, tenure, and removal; improvement; salaries and pensions.
9. The organization of city schools: departments, grades, and classes; the teacher's organization of the class; the principal's organization of the school; the superintendent's organization of the system; plans of grading and promotion; the purpose and the test of organization.
10. Country schools: their organization and supervision.

All the work of the course is treated from the standpoint of those immediately and directly responsible for the promotion of the public educational policy through the organization, administration, and supervision of the schools,—that is, largely from the standpoint of the superintendent and the supervising principal. Throughout, these studies will be practical and critical, seeking not merely to explain, but especially to form a just estimate of current policies and practices, and to suggest directions of progress.

The course will consist of lectures, discussions, and written reports. Readings will be suggested and special studies of assigned topics will be required of all candidates for the Summer School Certificate.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13–19.)

*This course will meet for at least one hour five times a week for six weeks at 11 A.M., in Lawrence 1.*

The fee for the course is \$20. (See pages 19-20.)

For further information concerning this course, address Dr. FRANK E. SPAULDING, Superintendent of Schools, Newton, Mass.

#### S10d. THE EQUIPMENT OF THE HISTORY TEACHER, AND METHODS OF TEACHING HISTORY.

The object of this course is to outline the preparation which a teacher should have to undertake the teaching of history, and to discuss the methods which have been employed by the most successful teachers. The text with which all intending to take the course should provide themselves is Henry E. Bourne's *The Teaching of History and Civics in the Elementary and the Secondary School* (Longmans, Green & Co., New York, \$1.50). The course will open with a consideration of the bibliography of the subject of methods of history teaching and some one or several books will be assigned to each student for reading and for report to the class. Each student will be called upon to outline several lessons in the subject matter of history for presentation and will be given practice in teaching a portion of the class. Exercises in the selection of the important and the elimination of the unimportant in history will be given. Teaching pupils how to study the text, the use of note-books, outlines, maps, written recitations, examinations, special reports, library references, the source method, comparative curricula, the correlation of the study of history with geography, civics, economics, and English will receive treatment in the lectures. In addition, each student or group of students will be required to present a report on some topic connected with the lectures and a critique of some recent text-book.

For *teachers in service* this course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. (See page 15.)

*This class will meet for at least one hour five times a week for six weeks at 9 A.M., in Harvard 1.*

The fee for the course is \$20. (See pages 19-20.)

For further information concerning this course, address the Instructor, Dr. JAMES SULLIVAN, Principal, Boys' High School, Brooklyn, N.Y.



## S10e. THE METHODS AND EQUIPMENT OF A TEACHER OF MATHEMATICS.

The work of the course is designed primarily for persons who teach, or intend to teach, arithmetic, algebra, geometry, and trigonometry. Ability to make use of French and German text-books, though not required, will be an advantage.

The student is advised to bring with him such hand-books on the teaching of mathematics as he may have.

Students expecting to count the course for a degree will be asked to make written reports upon assigned subjects.

The main topics of the course will be as enumerated below: —

1. A detailed survey of the curriculum, with a discussion of text-books and of class-room devices.
2. The development, in teaching, of the number idea, of deductive demonstration, and of analysis.
3. The claims of secondary school mathematics on the elementary schools, and the limits of effective work in preparing for college.
4. Mathematical subjects in college work, which a teacher can use to enlarge his own views and to strengthen his teaching.
5. The logical foundations of mathematics; the extent to which logical rigor can progress in school work. The preservation of the scientific side of mathematical instruction.
6. The study of the efforts and achievements of the pupils as a possible contribution to the development of educational science.

For *teachers in service* this course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. (See page 15.)

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Sever 24.*

The fee for the course is \$20. (See pages 19–20.)

For further particulars, address Mr. GEORGE W. EVANS, Principal, Charlestown High School, Boston, Mass.

**ELOCUTION.** (See page 131.)

---

## ENGINEERING.

HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Hydraulics and Sanitary Engineering.*

CLIFTON HARLAN PAIGE, B.A.S., *Instructor in Mathematics and Surveying.*

J. C. BARNES, S.B., *Instructor in Mathematics (North Georgia Agricultural College).*

JOSEPH M. WOLFE, A.M., *Assistant Professor of Mathematics (Bucknell University).*

HARRY PHIDIAS FORTÉ, S.B., *Austin Teaching Fellow in Applied Mechanics and Hydraulics.*

FRANK RODNEY PLEASANTON, S.B., *Instructor in Shopwork.*

EDWARD RUSSELL MARKHAM, *Instructor in Shopwork.*

Certain engineering courses named below which are given in the summer by the Division of Engineering for regular college students at the Engineering Camp are open to other qualified students who register in the Summer School. These courses offer special advantages to men who wish by concentrated effort to acquire a knowledge of these subjects, and to students intending to enter the Graduate School of Applied Science who are deficient in surveying and elementary mechanics. By taking courses in the summer, just previous to entering the Graduate School, a student may prepare himself for certain necessary advanced courses.

The Engineering Camp is situated on the eastern shore of Squam Lake, New Hampshire, and is most easily reached by rail (B. & M. R.R.) to Ashland, N. H., thence by boat (Asquam Transportation Co.) directly to the Camp.

The Camp property consists of about 500 acres of farm land suitable for various kinds of surveying problems. The buildings are especially adapted for this instruction; and the draughting rooms are fitted with suitable lights for evening work. The Camp owns a large and assorted equipment of surveying instruments.

All instruction in surveying for students in Engineering is given at the Camp during the summer. The work consists of a series of problems, which include and illustrate the use of necessary instruments and principles, each problem requiring from one to five days. Verbal and written directions are given to the students just before

going to the field. The students are divided into small squads, each in constant charge of an assistant. Field books, maps, computations, and reports are criticised from the standpoint of a practicing engineer. The intention is, as far as possible, to duplicate office methods. To test the student's progress in acquiring a knowledge of methods and of the mathematics of surveying, frequent written and field tests are held.

Instruction in Elementary Mechanics is a duplication of work given at Cambridge during the College Year. At the Camp these courses require continuous work from seven in the morning till about two in the afternoon, each half-course requiring three weeks' work.

Instructors and students live in tents. Meals are served on a large covered piazza; and the food is simple and wholesome. All students are required to board in the Camp. They live and work practically out of doors. Although the Camp duties are rigorous, they are performed under conditions favorable to health; the Camp is, however, not intended as a boarding place for men who do not wish to do the prescribed duties. For amusements there are baseball, mountain-climbing, canoeing, fishing, and swimming. The place is especially adapted for summer residence, on account of its climate and its beautiful situation in the foothills of the White Mountains.

During the summer of 1908 the following named courses will be given at the Camp. Other elementary courses in Engineering or Engineering Mathematics may be provided, if enough applicants make request in time.

### SURVEYING COURSES.

The following courses in Surveying are given in the summer for regular students in Harvard College by the Division of Engineering; but they may be taken by other competent students who register in the Summer School.

Engineering 4a. Surveying—Use and Adjustment of Instruments, Plane and Topographical Surveying, Topographical Drawing, and Levelling. Field practice. *Six weeks, beginning Thursday, June 18.* Professor H. J. HUGHES and Messrs. PAIGE and BARNES and assistants.

Course 4a is open to students who have studied Plane Trigonometry. It may be counted as one full course towards the degree of A.B. or S.B. in Harvard College.

For a statement about the credit for this course when taken in combination with other courses given at the Engineering Camp, and for the charges required, see pages 61-62.

The work of this course consists of the study of the theory and adjustments of surveying instruments, together with their practical use in the field. The field surveys consist of differential and profile levelling; chain, compass, and transit land surveys; cross-section, transit and stadia, plane-table topographical surveys; and the determination of position by astronomy.

*Text-book:* Raymond's *Plane Surveying*.

Engineering 4d. Railroad Engineering (first course). — Surveys for the location of railroads. Railroad curves. Field practice. *Five weeks, beginning Thursday, July 30.* Professor H. J. HUGHES and Messrs. PAIGE and BARNES and assistants.

Course 4d is open to students who have passed satisfactorily in Course 4a or its equivalent. It may be counted as one full course towards the degree of A.B. or S.B. in Harvard College.

For a statement about the credit for this course when taken in combination with other courses given at the Engineering Camp, and for the charges required, see pages 61-62.

The course is a study, with field practice, of the principles necessary to enable the engineer to select a route for a railroad, to determine the necessary grades and curves, to solve the problems incident to the location of the line upon the ground, to compute the quantities in excavation and embankment; and the study of track problems and railway curves. The students survey a line about eight miles long, take the topography, make a map location, adjust the location to the ground, compute the cost, and stake out track structures as for actual construction.

*Text-book:* Allen's *Railroad Curves and Earthwork*.

Engineering 4chf. Geodetic Surveying. — Field work of triangulation. The use of astronomical instruments in Surveying. *Three weeks, beginning Thursday, July 30.* Professor H. J. HUGHES and Mr. J. M. WOLFE and assistants.



This course is open to students who have passed satisfactorily in Course 4a and have a knowledge of spherical trigonometry. It may be counted as a half-course towards the degree of A.B. or S.B. in Harvard College.

For a statement about the credit for this course when taken in combination with other courses given at the Engineering Camp, and for the charges required, see pages 61-62.

The course includes instruction in base line measurements, angle observations, adjustments of angle observations and of triangulations, determination of absolute position, trigonometric and precise spirit levelling, the use of the sextant, map making, and theory of least squares.

*Text-book:* Crandall's *Geodesy and Least Squares*.

## COURSES IN MECHANICS.

The following courses are given in the summer for regular students in Harvard College by the Division of Engineering; but they may be taken by other competent students who register in the Summer School.

Engineering 5b hf. Elementary Statics. — Graphic and Algebraic Methods. *Three weeks, beginning June 18. At the Harvard Engineering Camp, Squam Lake, N.H.* Mr. H. P. FORTÉ.

For a statement concerning the credit for this course, and the charges, see pages 61-62.

This course is devoted to the study of Statics with special reference to a thorough grounding in the fundamental principles.

The instruction includes lectures, the solution of selected and graded problems (drawn mainly from engineering practice), and regular conferences between instructors and students.

Algebraic and graphic methods are developed with equal thoroughness, and, in general, each problem is solved by both methods.

The problems of the course include the investigation of the stability of structures, and the calculation of stresses in simple trusses and structures.

*Text-book:* Johnson's *Statics by Algebraic and Graphic Methods*.

Engineering 5d hf. Resistance of Materials (introductory course). — Elementary Structural Design. *Three weeks, beginning July 9.*

*At the Harvard Engineering Camp, Squam Lake, N. H.* Mr. H. P. FORTÉ.

For a statement concerning the credit for this course, and the charges, see below.

This course follows 5*b* and for a short period forms a continuation of it, the time being devoted to practice in the application of Statics to some of the more important types of structures.

After a brief exposition of the fundamental principles of Resistance of Materials, the work of the course is directed towards practice in the application of these principles to the simple problems constantly met in structural practice. Each student is required to solve a large number of problems in such a way as to encourage habits of speed and correctness in computation as well as to gain familiarity with the subject. These problems involve the prominent features of the design of wooden and steel beams, girders, footings, columns, and wooden and combination roof trusses.

*Reference books:* Johnson's *Materials of Construction*; Freitag's *Architectural Engineering*; steel manufacturer's handbooks.

Engineering 5*e hf*. Elementary Kinematics and Kinetics and problems in Statics. *Three weeks, beginning July 9. At the Harvard Engineering Camp, Squam Lake, N. H.* Mr. H. P. FORTÉ.

For a statement concerning the credit for this course, and the charges, see below.

Course 5*e* is open to students who have passed satisfactorily in Course 5*b* or an equivalent, and in the first half of Course 1*c* or an equivalent. It cannot be taken by a student who takes or has taken Mathematics 4.

This course is devoted to the treatment of the fundamentals of Kinematics and Kinetics. The instruction includes occasional lectures, with a large amount of problem work and regular conferences between the instructor and students.

One course only may be taken in any one period. The following combinations, however, may be taken in one summer : —

4*a* and 4*d*, total eleven weeks, counts as two courses for the bachelors' degrees.

4*a* and 4*c*, total nine weeks, counts as one and one-half courses.

5*b*, 5*e*, and 4*d* or 4*c* } counts as two with 4*d*, and one and one-half courses with 4*c*.  
5*b*, 5*d*, and 4*d* or 4*c* }

Any *one* course may be taken independently by qualified students. *4a* or its equivalent is required as preparation for *4d* or *4c*; and *5b*, or its equivalent, for *5d* or *5e*.

### *Charges.*

The total charges, including board, tuition, and laboratory fees, for students who have not been registered under the Faculty of Arts and Sciences and have not paid a full year's tuition for 1907-08, will be as follows :—

Engineering <i>4a</i> , . . . . .	\$80
“ <i>4d</i> , . . . . .	70
“ <i>4c</i> , . . . . .	40
“ <i>5b</i> , <i>5d</i> , or <i>5e</i> , each, . . .	45

For students who have paid a full year's tuition for the college year immediately previous to the summer's residence at the Camp, the charge is \$20 less for *4a* or *4d*, and \$10 less for *4c*; but no deduction is made for Engineering *5b*, *5d*, or *5e*. Students who enter the Graduate School of Applied Science and pay a full year's tuition for the College year immediately succeeding their summer's residence at the Camp will have refunded \$20 for *4a* or *4d* and \$10 for *4c* at the end of the College year.

Students intending to take courses at the Camp should communicate with Professor H. J. HUGHES, 114 Pierce Hall, Cambridge, Mass.

### SHOPWORK COURSES.

Four shopwork courses will be given in Cambridge, at the Rindge Manual Training School Shops on Irving Street, consisting of practice in the blacksmith shop, pattern shop, and machine shop, supplemented by lectures and by visits to manufacturing establishments in the vicinity of Cambridge.

The courses are given in the summer by the Division of Engineering for regular students in Harvard College; but they may be taken by other competent students who register in the Summer School.

These courses are intended to give students a knowledge of the materials and methods of manufacture adapted to the different engineering requirements, so that they may be able to make practical and economical designs of machinery.

The courses are intended primarily for students in Engineering. They are entitled Engineering 10a, 10b, 10c and 10e.

10a. Chipping, Filing, and Fitting. — Use of hand tools. — Fitting by hand. — Study of the metals in practical working. — Lectures and laboratory work. *Ninety hours, from about June 17 to July 13.* Messrs. F. R. PLEASANTON and E. R. MARKHAM.

10b. Blacksmithing. — Use of tools. — Forging, welding, tool-dressing and tempering. — Lectures and laboratory work. *Ninety hours, from about June 17 to July 13.* Messrs. F. R. PLEASANTON and E. R. MARKHAM.

10c. Pattern Making and Foundry Practice. — Use of wood-working tools. — Casting in iron and alloys. — Lectures and laboratory work. *Ninety hours, from about July 15 to August 17.* Messrs. F. R. PLEASANTON and E. R. MARKHAM.

10e. Machine-Shop Practice. — Use of machine tools. — Construction of parts of machinery, finishing and assembling parts. — Lectures and laboratory work. *Ninety hours, from about July 15 to August 17.* Messrs. F. R. PLEASANTON and E. R. MARKHAM.

The Rindge Manual Training School, situated near the University, will be used for the above-mentioned instruction. It has complete equipment for about one hundred and fifty students, with all facilities for practical instruction in bench work in metals, blacksmithing, pattern-making, and machine-tool work.

The courses in Chipping, Filing, and Fitting, and in Blacksmithing will begin about June 17 and will continue till about July 13. The courses in Pattern Making and Foundry Practice, and in Machine-Shop Practice will begin about July 15 and will continue till about August 17.

All four of these courses may be taken in one summer. They may be counted together as one and a half courses for the degree of S.B. in Harvard College. They cannot be counted for the degree of A.B.

The fee will be \$25 for each course.

For further information concerning these courses, address Professor I. N. HOLLIS, Pierce Hall, Cambridge, Mass.



## ENGLISH.

CHARLES TOWNSEND COPELAND, A.B., *Instructor in English and Lecturer on English Literature.*

ALBERT ELMER HANCOCK, Ph.D., *Associate Professor of English in Haverford College.*

PERCY ADAMS HUTCHISON, Ph.D., *Instructor in English.*

HENRY ROBINSON SHIPHERD, *Assistant in English.*

JAMES WALTER RANKIN, A.M., formerly *Instructor in English, Simmons College, Graduate Student.*

HENRY MILNER RIDEOUT, A.B., formerly *Instructor in English, Author.*

The courses in English will begin Wednesday, July 1, and end Wednesday, August 12, 1908.

Students may, in some cases, profitably take a course in English literature in connection with a course in English composition.

☞ The attention of students in English is called to the courses in Public Speaking, especially to Course 4 on "Oral Reading of English Classics." (See page 134.)

The fee for each course is \$20. (See pages 19-20.)

## COMPOSITION.

### SA. *Elementary Course.*

This course is similar to the course in rhetoric and composition prescribed for Freshmen in Harvard College. Its objects are chiefly these: to teach, through practice in theme-writing, correctness and facility in the use of English; to study, in lectures and conferences, the theory of English composition, so far as such study may be helpful in practice; and to make clear through all these means the methods of teaching English composition employed at Harvard College.

The following text-books will be used in the course: Gardiner, Kittredge, and Arnold, *Manual of Composition and Rhetoric* (1907); Wendell, *English Composition* (1895); Nutter, Hersey, and Greenough, *Specimens of Prose Composition* (1907); Hill, *Principles of Rhetoric* (revised and enlarged edition).

Those who wish to enter this course should be able to use the English language with as much intelligence and correctness as may

fairly be expected of the graduates of a good high school or academy. Persons who are fitting themselves for the course are advised to increase their knowledge of English in every possible way, and particularly to write frequent compositions and to read good books.

In connection with this course students may profitably take one of the courses in literature.

Two hours will be spent in the class-room at each session.

*The class will meet for two hours five times a week at 9 A.M., in Sever 6. Fee, \$20. (See pages 19-20.)*

For further information concerning this course, address the Instructor, Mr. H. R. SHIPHERD, 69 Dana Street, Cambridge, Mass.

### *SB. Advanced Course.*

This course is intended for those who have already completed the work of the elementary course or its equivalent, or who satisfy the instructor of their fitness to take the course. The work consists of discussions of various matters connected with the art of English composition; of two distinct kinds of practice in writing, (1) daily themes, (2) long themes; and of detailed criticism of these themes before the class.

The object of the daily theme, which is limited to one page of theme-paper, is to cultivate observation, and conciseness and ease of expression. The object of the long theme is to cultivate clearness and method in thought, and correctness, ease, and vigor in expression, by practice in three kinds of writing, — Exposition, Description, and Narration.

Two hours will be spent in the class-room at each session of the class. The time will be divided between lectures, accompanied by discussions of themes before the class, and personal conferences.

The text-books used will be Professor A. S. HILL's *Principles of Rhetoric* (the revised and enlarged edition), and Professor BARRETT WENDELL's *English Composition*.

In this course, as in the elementary course, teachers will have an opportunity to study the methods of teaching composition employed in Harvard College. A half-hour each day will be devoted to a practical method for secondary schools.

In connection with this course students may profitably take one of the courses in literature.

*The class will meet for two hours five times a week at 9 A.M., in Sever 1. Fee, \$20. (See pages 19-20.)*

For further information concerning this course, address the Instructor, Professor A. E. HANCOCK, Haverford College, Haverford, Pa.

#### SC. *Second Advanced Course.*

This course is open to those who present a certificate that they have completed *English B, Advanced Course*, of the Summer School, and to others who seem to the instructor sufficiently advanced in the study and practice of writing.

The work will consist of a short theme daily, and of six or more longer themes: the former to cover not more than one page of theme-paper; the latter not less than three pages nor more than six. During the first half of the course, the long themes will deal with unconnected topics; during the second half, they may develop continuously a single topic. Both the daily and the long themes are intended to afford, as far as possible, the conditions most favorable to the development of individuality in thought and expression.

In connection with this course students may profitably take one of the courses in literature.

*The class will meet for two hours five times a week at 9 A.M., in Sever 2. Fee, \$20. (See pages 19-20.)*

For further information concerning this course, address the Instructor, Mr. H. M. RIDEOUT, 3 Mountfort Street, Boston, Mass.

#### SD. *Argumentation.*

*This course in Argumentation will not be given in 1908.*

[This course is intended for persons who teach or intend to teach Argument in colleges or high schools. By lectures and exercises it will develop the principles of Argument, will provide practice, under criticism, in applying these principles, and will discuss methods of handling with classes both oral and written Argument.

The text-book used will be *The Principles of Argumentation* (revised edition), Ginn & Co.

*The class will meet for two hours five times a week at 11 A.M., in Sever 7.]*

## LANGUAGE AND LITERATURE.

*College Admission Requirements in English.*

The work of this course will comprise (1) a careful reading of the books prescribed for admission to college in 1909 and 1910, and selected books assigned for 1911, 1912, and 1913, with particular reference to methods of teaching them in schools, (2) a systematic study of the principles of composition which candidates for admission to college are expected to know, and of the various effective methods of presenting them to students, (3) practice in applying these principles in composition. In subject-matter presented, in methods of procedure used in the class-room, and in opportunities afforded for writing under criticism, the course, it is hoped, will be of especial value to teachers of English in secondary schools.

The books will be in general classified for study as follows: —

1. Exposition and Argument: Sir Roger de Coverley Papers, Lamb's Essays of Elia, Carlyle's Heroes and Hero Worship, Ruskin's Sesame and Lilies, Macaulay's Life of Johnson, Washington's Farewell Address, Burke's Speech on Conciliation with America.

2. Description and Narration: Irving's Sketch Book, Hawthorne's House of Seven Gables, Scott's Ivanhoe, Blackmore's Lorna Doone, Spenser's Faerie Queen (selections), Goldsmith's Deserted Village, Golden Treasury, Book IV, Coleridge's Ancient Mariner, selections from the prescribed reading in Tennyson and in Browning, Milton's Comus, L'Allegro, Il Penseroso, Shakspeare's Julius Caesar, and Macbeth.

The purpose will be to study their subject-matter as thoroughly as may be found necessary, to consider briefly their relation to other pieces of literature, and to go sufficiently into detail concerning the time of each author and the conditions under which he wrote, to give an intelligent interest in what is read.

The books prescribed for study will be read for their contents and as illustrations of the principles of structure and style. The books prescribed for reading will be read, not only as a means of stimulating appreciation of literature, but also in connection with the study of the principles of composition. In short daily themes the members of the course will be asked to record impressions which they obtain in the course of the reading or to express their opinions



on topics suggested by the instructor, and in longer weekly themes they will be expected to give the results of more extended thinking and study. The criticisms upon the themes, the discussions concerning them before the class and in personal conferences, and the instruction in composition, though adapted as far as possible to the actual needs of those taking the course, will in general aim merely to teach the methods of simple, direct, and accurate expression.

The text-books used in the course will be H. G. Pearson, *Principles of Composition*; Nutter, Hersey, and Greenough, *Specimens of Prose Composition*; *A Report on the Examinations in English for Admission to Harvard College*, and A. G. Newcomer, *English Literature*. Students should be supplied with editions of the prescribed books. It is desirable that as many of the books as possible should be read before taking the course.

*The class will meet for two hours five times a week at 9 A.M., in Sever 5. Fee, \$20. (See pages 19-20.)*

For further information concerning this course address the Instructor, Mr. C. R. NUTTER, 20 Quincy St., Cambridge, Mass.

*English Literature from Anglo-Saxon times to the Present.*

This course will be an introduction to the study of English literature in detail. The lectures will deal with the national culture of England and with the significant writers in each epoch. The minor writers will be treated by reference to a text-book and by supplementary comment. The class will read representative works of each period, such as Beowulf, Chaucer's *Canterbury Tales*, Marlowe's *Tamburlaine*, Fielding's *Tom Jones*, Byron's *Childe Harold*, Carlyle's *Heroes and Hero Worship*, Tennyson's *Idylls of the King*. A large list of titles, arranged in groups, will be given; from these groups the student may make selections suitable to his needs.

*The class will meet five times a week for six weeks at 11 A.M., in Sever 1.*

Fee, \$20. (See pages 19-20.)

For further information concerning this course address the Instructor, Professor A. E. HANCOCK, Haverford College, Haverford, Pa.

*Anglo-Saxon.*

This course requires no previous knowledge of Anglo-Saxon. Intended both for teachers of English in schools and for students

in college, it undertakes to provide them with a foundation for more thorough work in the English language and English literature. With this end in view, the attempt is made to show clearly the relation of Anglo-Saxon to modern English, as well as to consider carefully the grammatical forms and the syntax of the language in the early period. The selections read, comprising both prose and poetry, are studied also from a literary point of view, and lectures are given on Anglo-Saxon literature. At the end of the course, students should be able to read ordinary Anglo-Saxon prose readily at sight. The text-book used is Bright's *Anglo-Saxon Reader*.

This course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. (See page 15.)

*The class will meet for an hour and a half five times a week at 9 A.M., in Sever 26. Fee, \$20. (See pages 19-20.)*

For further information concerning this course, address the Instructor, Mr. J. W. RANKIN, 14 Sumner Road, Cambridge, Mass.

#### *Shakspere.*

*This course in Shakspere will not be given in 1908.*

[In this course the work will be divided into two parts. Three times a week lectures will be given on the plays, which will be treated in relation to their sources, to Shakspere's development as a dramatist, and to the conditions of the English drama in his time. In the remaining hours, one or two selected plays will be read in class for the purpose of more detailed study of Shakspere's language and method.

This course may be profitably taken in addition to one of the courses in composition.

*The class will meet for an hour and a half five times a week at 11 A.M., in Sever 2. Fee, \$20.]*

#### *English Literature of the Eighteenth Century.*

The main purpose of this course is to give students a general acquaintance with the lives and the works of the chief writers of the period treated, and with their position in literary history. A large amount of reading is prescribed, a still larger amount is recommended, and written work is called for. Students are encouraged (1) to form opinions of their own about what they read; and (2) to express their opinions with intelligence, precision, and

brevity. The course is intended to furnish a basis for systematic study after students have left the Summer School.

This course may be profitably taken in addition to one of the courses in composition.

*The class will meet for an hour and a half five times a week at 11 A.M., in Sever 2. Fee, \$20. (See pages 19-20.)*

For further information concerning this course address the Instructor, Mr. H. M. RIDEOUT, 3 Mountfort Street, Boston, Mass.

*English Literature of the Nineteenth Century — from the publication of the Lyrical Ballads to the Death of Tennyson (1798-1892).*

This course deals with the romantic revival at the beginning of the century, with the forces, social and political, which brought it about, and with the principal tendencies that have been manifested in literature since then. Attention will be centred chiefly on English writers of the first three-quarters of the century. Among these may be named Wordsworth, Coleridge, Shelley, Byron, Keats, De Quincey, Miss Austen, Scott, Newman, Carlyle, Ruskin, Tennyson, Browning, Matthew Arnold, Dickens, Thackeray, George Eliot, and George Meredith.

This course may be profitably taken in addition to one of the courses in composition.

*The class will meet for an hour and a half five times a week at 11 A.M., in Emerson D. Fee, \$20. (See pages 19-20.)*

For further information concerning this course, address the Instructor, Mr. C. T. Copeland, 15 Hollis Hall, Cambridge, Mass.

*The Chief Poets of the Romantic Period: Wordsworth, Coleridge, Scott, Byron, Shelley, Keats.*

The purpose of this course will be threefold: first, to trace in some detail that revolt in the world of letters, and that "Return to Nature," which culminated in the extraordinary poetic outburst of the first quarter of the nineteenth century; second, to test by means of this poetry the adequacy of the various definitions of Romanticism; and, third, to arrive at a critical valuation of these several poets. To this latter end, in addition to the readings assigned to the class as a whole, each student will be expected to make a more comprehensive study of a considerable portion of the works of a single poet to be selected by the student himself. As is usual in the college courses

dealing with such a subject, the student will present the results of his study in a report, or short "thesis."

*The class will meet one hour a day (and, at the pleasure of the instructor, an additional half-hour) five times a week for six weeks, at 11 A.M. in Sever B.*

Fee for the course, \$20. (See pages 19-20.)

For further information address Dr. P. A. HUTCHISON, 371 Harvard Street, Cambridge, Mass.

**ETHICS.** (See page 106.)

**EUROPEAN HISTORY.** (See page 88.)

### THE FINE ARTS.

HERBERT LANGFORD WARREN, A.M., *Nelson Robinson Jr. Professor of Architecture.*

DENMAN WALDO ROSS, Ph.D., *Lecturer on the Theory of Design.*

WILLIAM LUTHER MOWLL, S.B., *Assistant Professor of Architecture.*

OLIVER SAMUEL TONKS, Ph.D., *Princeton University.*

MARTIN MOWER, *Instructor in Fine Arts.*

EDGAR OSCAR PARKER, *Assistant in Drawing.*

Six courses in the Fine Arts will be given in 1908, beginning July 1, and ending August 12. There will be two on the *History of Architecture*, one on *Architectural Design*, one on *Design as Applied in the Arts*, one on *Drawing and Painting in Representation*, and one on the *History of Ancient Art*.

These courses are described below.

#### S1a. HISTORY OF EUROPEAN ARCHITECTURE TO ABOUT THE YEAR A.D. 1000.

This course is intended to help to an intelligent appreciation of architectural styles and their development. The history of the styles will be considered with sufficient fulness to meet the needs of teachers of history or teachers of drawing in the schools, or of any who wish to obtain a good general knowledge of architectural history. It will include some consideration of the sculpture of the successive periods, in so far as it is directly connected with architecture. The subject will be treated generally rather than



technically. The history of architecture will be considered in its relations to the history of civilization, and the gradual development of architectural form in response to the demands of environment will be traced. The buildings themselves will be studied so far as is possible, by means of photographs and drawings, and not merely what has been written about them. Some knowledge of drawing will be useful though not indispensable. Opportunities will be given for tracing and sketching subjects in illustration of the course, but this work will not be required of students. The course will be conducted by means of lectures and conferences. Students will be guided in a scheme of reading parallel to the lectures. The lectures will be fully illustrated by stereopticon, and students enrolled in the course will have access to the library of the Department of Architecture, which contains 1,264 volumes, and over 10,000 photographs of architectural subjects.

After a brief introduction on the architecture of ancient Egypt, Assyria and Persia, the course will consider in greater detail the architecture of Greece, Rome, and Byzantium, and the beginnings of the Middle Ages in Western Europe. The continuity of development of architectural form will be pointed out, and the periods of transition in which the origins of the successive styles are to be sought will receive such consideration as will show clearly by what gradual steps the distinctive styles of successive epochs were formed. Architecture will thus be seen to have undergone a gradual evolution analogous to that of the growth of language.

The course covers in a more general and less technical way the same ground as Architecture 1a and the first part of Architecture 1b given in the Department of Architecture.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13-19.)

*This course will meet for at least one hour five times a week for six weeks at 11 A.M. in the Lecture Room, first floor, Robinson Hall.*

The fee for this course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor H. L. WARREN, Garden Terrace, Cambridge, Mass.

### S1b. THE HISTORY OF EUROPEAN ARCHITECTURE FROM ABOUT THE YEAR A.D. 1000 TO THE CLOSE OF THE RENAISSANCE.

This course is a continuation of the previous one on the history of European Architecture to about the year 1000, and will be conducted in the same way. It will take up the development of architecture where the previous course left it, at the beginning of the middle ages, and will consider the development of the Romanesque and Gothic architecture, and the sculpture and minor arts connected therewith, and the subsequent revival of classic forms in the period of the Renaissance. It will consider the progress of Mediaeval and of Renaissance architecture in Italy, France, Germany, Spain, and England.

The course covers in a more general way the same ground as the second part of Architecture 1b and the greater part of Architecture 1c.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13-19.)

*This course will meet for at least one hour five times a week for six weeks at 9 A.M. in the Lecture Room, first floor, Robinson Hall.*

The fee for this course is \$20. (See pages 19-20.)

N.B. — Students proposing to study architecture professionally should take Courses 1a, 1b, and 1c in preference to these summer courses. The summer courses cannot, taken by themselves, be regarded as a fulfilment of the requirement in architectural history for the professional degree. Under certain circumstances, however, they may be so accepted, when accompanied by other work, in the case of students who attain high grade.

For further information address Professor H. L. WARREN, Garden Terrace, Cambridge, Mass.

### S4. ARCHITECTURAL DESIGN.

This is a course in architectural design conducted by means of problems and criticisms, as are the Courses 4a, 4b, and 4c in the regular term. This course cannot be counted for a degree, taken by itself, but credit will be given, in connection with the regular Courses 4a, 4b, and 4c, for work successfully performed in this course in the summer.

There will be opportunity provided to complete *two long problems and three sketch problems*; there will be criticisms five times a week.

For those who desire a more extended course, opportunity will be given, beginning June 1, to do *three more long problems and other sketch problems*, in addition to those named above. Such problems successfully completed will also count towards the work of the regular Courses 4a, 4b, and 4c. This longer course will extend to September 5.

The fee for the short course is \$25; for the long course, \$45. (See pages 19-20.)

For further information address Professor WILLIAM L. MOWLL, 11 Orchard St., Cambridge, Mass.

### S7c. DESIGN AS APPLIED IN THE ARTS.

#### *Lectures with Experimental Practice.*

Dr. Ross's book, *A Theory of Pure Design* (Houghton, Mifflin & Co.), will be used as a text-book in this course. The lectures will proceed beyond the text-book and will explain how the Principles of Pure Design, as defined in the book, have been applied in different Arts: in Gymnastics, in Dancing, in Music, in Speech, in Construction, in Modelling, in Carving, in Drawing and Painting. Certain types of work will be particularly considered: Writing, Printing, Bookbinding, Iron Work, Jewelry, Pottery, Weaving, Stained Glass, and Mural Painting. The student will have the opportunity of seeing a large number of examples and illustrations. He will have access not only to the collections of the University, but to those of the Museum of Fine Arts in Boston. Methods of study will be explained. The student will be urged to make comparisons and to pass judgments: to distinguish what is best in each type of work. Examples will be studied, not so much with the idea of imitation or reproduction, as with the idea of discovering in them the methods of work and the Principles of Design. Art being a tradition, we find in the work of the past the methods and principles which we must follow in our own work, whatever that is. In the exercises, which will take up most of the time between the lectures, the student will be required to produce a certain number of designs. In so doing he will get some practice in designing. In this work he will be urged to follow principles rather than

precedents; to think for himself, and express his own ideas. Those who have not, in previous years, taken the Course in Pure Design will, in these exercises, do little more than illustrate the ideas of Harmony, Balance, and Rhythm in tone, measure, and shape-relations, making such illustrations as have been produced in the course in Pure Design; but those who have previously taken the course in Pure Design may be able to go further and produce designs of some interest and value. That depends very much upon the good taste and judgment which is acquired by the study of examples.

It is the object of this course to exercise the imagination and to develop the sense of beauty. The course is intended for students, for designers, for teachers of design, and for teachers of the history of art.

There will be two lectures in each week for six weeks, twelve lectures in all. They will be given in the Lecture Room, first floor, of Robinson Hall, the building of the Department of Architecture, on Tuesdays and Thursdays at ten o'clock. Beyond the time given to the lectures at least eighteen hours a week should be devoted to the study of objects and to the exercises in designing. The work may be done at Robinson Hall, or at home, as the student may prefer. The instructors will be in attendance, except on Saturdays. At the end of the course there will be an examination on the textbook and in the subject-matter of the lectures. A certificate will be given to those who pass the examinations and whose work is satisfactory.

This course is accepted as a half-course for a degree in Harvard University. It is the equivalent of Architecture 7c of the Harvard Courses of Instruction. (See pages 13-19.)

The fee for the course is \$25. Students taking this course will be allowed to attend, free of charge, the lectures in the course in Drawing and Painting in Representation, but they will not be allowed to undertake the work in that course. (See pages 19-20.)

For information about lodgings, reduced railway fares, and expenses, address the Chairman of the Summer School, Professor J. L. LOVE, 4 Lawrence Hall, Cambridge, Mass.

Dr. Ross's address is 24 Craigie St., Cambridge, Mass.



## S7b. DRAWING AND PAINTING IN REPRESENTATION.

*Lectures with Experimental Practice.*

The following subjects will be considered in this course: Sight and Imagination, visual impressions and visual images. Expression in the terms of drawing and painting. Imaginative composition. The Truth of Representation. Drawing and painting from natural objects. Different points of view to be taken. Drawing in the manner of tracing. Drawing of shape-relations. Drawing by triangulation. Description of solid forms by contours and contrasts of the Scale of Values. The Scale of Values. Abstract form-drawing as distinguished from drawing in chiaroscuro. The study of tone-relations; values, colors, and intensities of color. The possibility of definite thinking in tone-relations. The principal modes of the Art of Painting: painting with outlines and flat tones, with lights and darks which are not lights and shadows, as in Greek vases and in Japanese prints; painting in low relief, in the manner of the early Sienese and Florentine masters; painting in full relief, in the manner of the later Florentines; painting in chiaroscuro, in the manner of the Venetians. The law of color in effects of chiaroscuro and of aerial perspective. A description, with examples and illustrations, of the different types of drawing and painting. Archaic efforts in representation. Greek vase painting. Chinese and Japanese painting. Japanese color prints. Early Italian painting: the schools of Siena and Florence. Later Italian painting: the Venetian school. The great masters of the Renaissance. A consideration of modern painting and modern methods of teaching. The difference between the methods of imitation and of imagination. The truth of imitation (statistics), and the truth of imagination (ideas). The importance of order and beauty in the composition of drawings and paintings. Design in representation. The laws of pictorial composition. Representation in forms of Pure Design (balance, rhythm, and harmony). The study of Pure Design: its importance as an educational discipline. The value and the place of drawing and painting in our system of education. Their importance as a means of inducing visual discrimination and as a means of developing the power of imagination, — thinking in tones, positions, measures, and shapes. Their importance as a means of

definition, description, and illustration, in almost all branches of scientific and mechanical work. Their importance as a means of inducing, not only visual discrimination, but the perception of beauty, as it occurs in Nature and in works of Art. Their importance as one of the principal modes of artistic effort and achievement. Suggestions for Teachers.

The exercises which the student will be expected to perform will follow the course of the lectures. They are planned to give the student some experience of drawing and painting, some technical knowledge of these arts, and some measure of technical ability. The exercises will be definite in number and description. They are to be worked out on sheets of paper, or canvas boards, of a uniform size (10 by 14 inches). In the exercises in drawing, pencils or crayons will be used; in the exercises in painting, either water-colors or oils, whichever is preferred. The student is advised to bring the materials which he is in the habit of using, which will probably serve the purpose. A list of materials recommended will be furnished to the members of the class at the first meeting. The exercises are to be worked out by the student according to principles described and directions given in the lectures. When done they are to be passed in to the instructors for criticism. The work may be done at Robinson Hall, or at home, as the student may prefer. The instructors will be in attendance, except on Saturdays. Students taking the course will be expected to devote at least eighteen hours a week to the work.

The course is intended for students, for professional painters, for teachers of drawing and painting, and for teachers of the history of art.

There will be twelve lectures in this course, two in each week for six weeks. The lectures will be given in the Lecture-Room, first floor, of Robinson Hall, the building of the Department of Architecture, on Wednesdays and Fridays at ten o'clock.

This course is accepted as a half-course for a degree in Harvard University. It is the equivalent of Architecture 7*b* of the Harvard Courses of Instruction. (See pages 13-19.)

The fee for the course is \$25. Students taking this course will be allowed to attend the twelve lectures given in the course on Design, free of charge, but no one will be allowed to undertake the work in more than one of these courses. (See pages 19-20.)

For information in regard to lodgings, expenses, reduced railway fares, etc., address the Chairman of the Summer School, Professor J. L. LOVE, 4 Lawrence Hall, Cambridge, Mass.

Dr. Ross's address is 24 Craigie St., Cambridge, Mass.

### S3. THE HISTORY OF ANCIENT ART: CLASSICAL ARCHAEOLOGY.

The purpose of this course is to present very briefly the history of the development of architecture, sculpture, and painting, and to some extent the lesser arts, from the earliest period to the downfall of the ancient civilization. Attention will be directed mainly to the Greek period, but the history of art in Egypt and Assyria and the pre-historic "Mycenaean" civilization will be briefly discussed, and the final lectures will be devoted to a consideration of the later development of Greek art during the Hellenistic and Roman periods.

The course will be helpful to teachers and students of the classics, of the history of art, and of the theory of design.

The course will be conducted by means of lectures illustrated with the stereopticon, supplemented by reading, conferences, and the study of photographs and casts. The necessary books will be reserved in the University Library, and the large collection of photographs and casts in the Fogg Museum of Art will be at the disposal of the members of the class. Students will be provided with tickets of admission to the Boston Museum of Fine Arts, with its excellent collection of original works and casts, and this collection will also be available for occasional supplementary lectures, if such can be arranged.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is the equivalent, in part, of Fine Arts 3 of the Harvard Courses of Instruction. (See page 15.)

*The class will meet for at least one hour five times a week for six weeks at 11 A.M., in the Fogg Lecture Room.*

The fee for the course is \$25. (See pages 19-20.)

For further information about this course, address the Instructor, Professor OLIVER S. TONKS, Princeton, N. J.

---

**FRENCH.** (See page 136.)

**GEODETTIC SURVEYING.** (See page 59.)

### **GEOLOGY AND GEOGRAPHY.**

**WILLIAM MORRIS DAVIS**, M.E., S.D., Ph.D., *Sturgis-Hooper Professor of Geology.*

**JOHN ELIOT WOLFF**, Ph.D., *Professor of Petrography and Mineralogy, and Curator of the Mineralogical Museum.*

**JAY BACKUS WOODWORTH**, S.B., *Assistant Professor of Geology, in charge of Shaler Memorial Expedition to South America.*

**DOUGLAS WILSON JOHNSON**, S.B., Ph.D., *Assistant Professor of Physiography.*

**GEORGE ROGERS MANSFIELD**, Ph.D., *Instructor in Geology.*

Several advanced summer courses given under the direction of the Department of Geology and Geography are offered in the summer of 1908. None of these courses are given in Cambridge and none are open to women. Courses S4 and S4, when given, and Course S5 count as the equivalents of Courses 4, 4 and 5 given in term-time. For the counting of the courses in this list for advanced work, see statements below. Courses S4 and S4 are designed for beginners. Course S5 is intended for those who have an elementary knowledge of geology. The courses of research grouped under the number S20 provide work suitable for candidates for the doctorate.

### **ELEMENTARY COURSES IN GEOLOGY AND GEOGRAPHY.**

[S4. A half-course in Dynamical and Structural Geology; conducted in Cambridge; equivalent to Course 4. Omitted in 1908.]

[S4. Elementary course in Physical Geography. Omitted in 1908.]

### **GENERAL FIELD GEOLOGY.**

S5. A half-course in Field Work in Historical and Structural Geology; conducted in the Rocky Mountains of Montana. *Six times a week for five weeks.* Dr. G. R. MANSFIELD.

Course S5 is designed to count as the equivalent of Course 5 when conducted in a fossiliferous region. It is accepted as a half-course

towards the degree of A.B. or S.B., and, under special circumstances, with the approval of the Division of Geology and of the appropriate Administrative Board, for the degrees of A.M. and S.M. (in Geology) by students who have taken Geology 5; but students who have passed in Course S5 cannot afterwards count Course 5 in term-time.

The fee for this course is \$22, including the registration fee, which sum should be paid to the Bursar of Harvard University, Mr. CHARLES F. MASON, Dane Hall, Cambridge, Mass., on or before enrolment.

In the summer of 1908 it is proposed to conduct this course in Montana, between Bozeman and the northwestern corner of the Yellowstone Park in the area of the Three Forks and Dillon quadrangles and the region immediately southwards. The necessary camp equipment can be obtained at Bozeman. The estimated cost of the trip for five weeks out and back from Bozeman is \$75 (in 1907, it was \$61). The expense of the journey, including the five weeks in camp and travelling expenses from Boston to Bozeman and return, is estimated at \$250.

The party will assemble at Bozeman early in July, on a date to be announced in correspondence with those who apply to take the course.

Members of this course will register on blanks provided by the instructor when the class meets at Bozeman; and such students will be listed as members of the Summer School of Arts and Sciences.

Persons proposing to join this party and desiring further information should address Dr. GEORGE R. MANSFIELD, Geological Museum, Oxford Street, Cambridge, Mass., and make known their determination to take the course by June 15.

For scholarship aid available for this course, see statement below.

#### COURSES IN FIELD INVESTIGATION.

The courses in geology and geography or physiography described below are open to a limited number of men qualified to undertake advanced work. In addition to these specified courses, the Instructors named will undertake to direct the field-work of students in other suitable areas. If pursued for five weeks, six days a week, the work in any one of these courses is accepted as a half-course towards the degree of A.B. or S.B.; and, under special conditions,



with the approval of the Division of Geology and of the appropriate Administrative Board, towards the degrees of A.M. and M.S. They provide work suitable also for candidates for the degree of Ph.D. or S.D. If followed for ten weeks, six days a week, any one of these courses is accepted as a whole course in the same manner. The work in these courses may be personally supervised by the instructor in the field, conducted by occasional visits to the field in which the student is engaged, or carried on by correspondence. By special arrangement, other localities than those here specified may be chosen for study.

A registration fee of \$2 for each course is payable to the Bursar of the University, Mr. CHARLES F. MASON, Dane Hall, Cambridge, Mass., on registration. See statement below concerning the J. D. WHITNEY Scholarship.

#### S20a. PHYSIOGRAPHIC FIELD INVESTIGATION.

*Section A.* Physiographic studies in northern Italy and southern Switzerland. Professor DAVIS. For information concerning this course, the plan of work, requirements, and probable expenses for travelling, address Professor W. M. DAVIS, 17 Francis Ave., Cambridge, Mass., before April 20, or Care of Coutts & Co., Strand, London, England, after April 20.

Fee, \$2. (See page 20.)

*Section B.* Physiographic studies in Central France. Asst. Professor JOHNSON. For information as to the field of study, requirements, plan of the course, and probable expenses for travelling, address Professor D. W. JOHNSON, 56 Wendell Street, Cambridge, Mass., on or before June 1.

Fee, \$2. (See page 20.)

#### S20c. GEOLOGIC FIELD INVESTIGATION.

*Section A.* Geological and petrographical studies in Montana or in New England. For information concerning this course, address Professor J. E. WOLFF, University Museum, Cambridge, Mass., not later than June 1.

Fee, \$2. (See page 20.)

*Section B.* Geological field work in Brazil. Asst. Professor WOODWORTH. A limited number of qualified students may, with the approval of Professor WOODWORTH, in charge of the Shaler Memorial Expedition, accompany a field party in Brazil. Such per-

sons will be expected to pay their own expenses. The expedition will sail from New York for Rio de Janeiro on June 20. For information concerning this course address Professor J. B. WOODWORTH, Room 24, Geological Museum, Cambridge, Mass., not later than May 15.

Fee, \$2. (See page 20.)

#### THE J. D. WHITNEY SCHOLARSHIP.

One travelling scholarship of \$200 (or two of \$100 each) is provided by the Josiah Dwight Whitney Fund for meritorious students of geology and geography, preferably for work in the Rocky Mountains. The applicants must be men students not professionally engaged or permanently placed as teachers of geography or geology. Applications with credentials, stating age, previous training, and the preference of the candidate for future work, should be mailed to Professor J. E. WOLFF, Chairman of the Committee on the J. D. Whitney Scholarship, Geological Museum, Harvard University, Cambridge, Mass., on or before June 1, 1908. The award of this scholarship is made by the President and Fellows of Harvard University upon the recommendation of a sub-committee of the Department of Geology and Geography.

The following Whitney Scholars have been appointed: S. A. Starratt and W. F. Low, field-work in Montana, 1905; Herbert Eugene Merwin, field-work in Vermont, 1906; Frederick Henry Lahee, field-work in Montana, 1907.

---

The programme of the Division of Geology, giving an account of the instruction in geology, palaeontology, economic geology, meteorology, climatology, physical geography, mineralogy and petrography, will be sent on application to the Publication Office, Harvard University, Cambridge, Mass.

**GEOMETRY.** (See page 100.)

## GERMAN.

HERMANN JULIUS WEBER, Ph.D., *Instructor in German.*

ALBERT WILHELM BOESCHIE, Ph.D., *Instructor in German.*

Three courses will be given in 1908. The courses will begin on Wednesday, July 1, and end on Wednesday, August 12, 1908.

### S1. GERMAN GRAMMAR AND COMPOSITION. METHODS OF TEACHING, AND THE EQUIPMENT OF A TEACHER OF GERMAN.

This course combines a thorough study of German grammar with constant attention to the needs of teachers of German. A knowledge of the elements of German is presupposed. An important part of the work will be the treatment of difficult topics in grammar, especially syntax, and the discussion of the most practical ways of presenting such matters to the pupils. Composition exercises, methodically graded and specially adapted to the needs of this course, are to be done outside of the class and will be corrected and discussed by the instructor.

Among the subjects treated in the lectures and discussions are the following: The advantages and disadvantages of the natural method and its use in connection with systematic grammatical instruction; the standard pronunciation of German and the value of the phonetic method in acquiring and teaching it; the disciplinary and practical value of reading aloud, of translation from and into German; the teacher's helps and sources of information, such as grammars, special treatises on pronunciation, orthography, syntax, general and special dictionaries, general and special works on literature, important periodicals, charts, maps, pictures, etc.

German conversation as a practical demonstration of the principles discussed will form a part of this course, but those students who desire special training in conversation are urged to take the course in conversation described below.

The course is so arranged that it may be taken with profit in two successive years.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet five times a week for six weeks at 9 A.M., in Sever 17.*

The fee for this course is \$20. (See pages 19-20.)

For further information concerning this course, address the Instructor, Dr. A. W. BOESCHE, 322 Harvard Street, Cambridge, Mass.

## S2. GERMAN CONVERSATION.

This course consists wholly of practice in conversation. It does not presuppose more than an elementary knowledge of German. A manual of German conversation will be used, and the students will be expected to acquaint themselves beforehand with the material to be used each day. No further preparation will be required, but the instructor will suggest ways of supplementing the class-room exercises by outside work.

*This class will meet five times a week for six weeks at 11 A.M., in Sever 17.*

The fee for this course is \$20; but if taken with either of the other courses in German, the fee is \$30 for the two courses. (See pages 19-20.)

For further information address the Instructor, Dr. A. W. BOESCHE, 322 Harvard Street, Cambridge, Mass.

## S3. GERMAN DRAMATISTS OF THE NINETEENTH CENTURY.

This course is suited to the requirements of students who possess a fair reading knowledge of German. It is primarily intended to meet the needs of teachers in service and of those preparing to teach. It is proposed to read in class, or to assign for outside reading, such plays as: Kleist, *Prinz Friedrich von Homburg*; Grillparzer, *Des Meeres und der Liebe Wellen*, *Der Traum ein Leben*, *Weh dem, der lügt*; Hebbel, *Herodes und Mariamne*, *Die Nibelungen*; Ludwig, *Der Erbförster*; Wagner, *Die Meistersinger von Nürnberg*; Wilbrandt, *Der Meister von Palmyra*; Hauptmann, *Die Weber*, *Hanneles Himmelfahrt*, *Die versunkene Glocke*; Sudermann, *Teja*.

The reading will be supplemented by the discussion of stylistic, literary, and social questions, and by lectures which will aim at giving a comprehensive view of the development of the German drama in the nineteenth century, with some attention to other literary forms. Both English and German will be used in the class-room.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The course will meet five times a week for six weeks at 9 A.M., in Sever 13.*

The fee for this course is \$20. (See pages 19-20.)

For further information address the Instructor, Dr. H. J. WEBER, 43 Lexington Avenue, Cambridge, Mass.

**GREEK.** (See page 44.)

**GREEK LIFE.** (See page 45.)

**HARMONY AND COUNTERPOINT.** (See page 103.)

## HISTORY AND GOVERNMENT.

WILLIAM MACDONALD, Ph.D., LL.D., *Professor of American History, Brown University.*

WILLIAM SCOTT FERGUSON, Ph.D., *Assistant Professor of History.*


WILLIAM BENNETT MUNRO, Ph.D., *Assistant Professor of Government.*

Six general courses will be given in this group of subjects, beginning July 1, and ending August 12. These courses are designed for teachers or well-trained students, and will devote special attention to methods of presentation and to useful class exercises; some previous knowledge of the matters treated is presupposed.

Attention is called to the opportunities to visit, under competent direction, the historical sites and buildings in Eastern Massachusetts. See "Historical Excursions."

The fee for any one course is \$20. It will not be possible to do the entire work and take the examinations, or to receive the Certificate, in more than one course.

These courses will begin on Wednesday, July 1, and end on Wednesday, August 12, 1908.

 For a course on Methods of Teaching History, see page 55.

## S2. GREEK HISTORY.

This course is intended primarily for teachers of ancient history in secondary schools. The history of Greece will be treated as part of the general history of the ancient world. Special attention will be given to Greek culture—to its chief masterpieces, and to the



conditions which promoted its rise and spread. The lectures will not attempt to give a continuous narrative, but will be devoted to a series of topics selected because of their importance. Various aspects of the following general subjects will be presented:—

1. Recent histories of Greece.
2. The Mycenaean Age.
3. The Greek Middle Ages.
4. Greek Expansion.
5. The growth of Sparta.
6. Solon and the Age of the Seven Wise Men.
7. The Persian Empire.
8. Judaism *vs.* Hellenism.
9. Themistocles and Pericles.
10. The State and Empire of the Athenians.
11. Public Life in Athens.
12. Attic Society and Culture during the Age of Pericles.
13. The Peloponnesian War.
14. The Sophists.
15. Socrates, Thucydides, and Hippocrates.
16. Imperial Sparta.
17. The City-state and City-economy.
18. The Class Struggles of the Fourth Century B.C.
19. Tyranny — Dionysius and Agathocles.
20. Monarchy — Philip and Alexander.
21. Hellenistic Athens.
22. The Dynasty of the Ptolemies.
23. Asia under the Seleucids.
24. Hellenistic Culture.
25. Rome in the Orient.
26. Greece at the time of Plutarch.
27. From Plutarch to Justinian.

Questions of method and of relative emphasis in the teaching of Greek History will receive consideration, and the books of most value to teachers will be indicated.

Students who desire a certificate for the work of the course will be required to cover the field of Greek history in a substantial manual, such as Bury's *History of Greece*, and to do a considerable amount of assigned reading in the sources in English translation,

and in the recent literature of the subject. Two written reports and a final examination will be required.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

The fee for the course is \$20. (See pages 19-20.)

*The class will meet for one hour five times a week for six weeks in Harvard 4, at 9 A.M.*

For further information address Professor W. S. FERGUSON, University of California, Berkeley, Cal., until May 1; then 4 Lawrence Hall, Cambridge, Mass.

### S3. ROMAN HISTORY.

This course is primarily intended for teachers of ancient history in secondary schools. The history of Rome will be treated as part of the general history of the ancient world. The earlier period will not be neglected, but the main emphasis will be placed upon the later Republic and the Empire. The lectures will not attempt to give a continuous narrative, but will treat topically the more important subjects. Particular attention will be given to the Roman system of government and to economic and social conditions. Questions of method and of relative emphasis in the teaching of Roman history will also be considered, and the books of most value to teachers will be indicated.

The instructor will be ready to arrange and direct a special course of reading and investigation for students who are prepared to do advanced work in Ancient History.

Students who desire a certificate for the work of the course will be required to cover the field of Roman history in a substantial manual, such as Pelham's *Outlines of Roman History*, and to do a considerable amount of assigned reading in the general histories of Mommsen, Ihne, and Duruy, and in more special works. Two written reports and a final examination will also be required.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet for at least one hour five times a week for six weeks in Harvard 4, at 10 A.M.*

The fee for the course is \$20. (See pages 19-20.)

For further information address Professor W. S. FERGUSON, University of California, Berkeley, Cal., until May 1; then 4 Lawrence Hall, Cambridge, Mass.

## S1. EUROPEAN HISTORY, 800-1648 A.D.

This course is intended to present, in systematic form, a selected number of important topics in the history of western Europe from the time of Charles the Great to the close of the Thirty Years' War. For properly qualified students it will serve as an introduction to the study of both mediaeval and modern European history, and is particularly designed to meet the needs of teachers of history in secondary schools and of those who desire a comprehensive view of the period. The instruction will be chiefly by lectures, supplemented by collateral reading, oral and written reports on assigned topics, and discussions.

## OUTLINE OF LECTURES AND TOPICS FOR DISCUSSION.

1. Europe in the time of Charles the Great.
2. The empire after Charles the Great.
3. Feudalism.
4. The growth of monarchy in France.
5. England in the eleventh century.
6. The relations of empire and papacy.
7. The investiture controversy.
8. The early Crusades.
9. The later Crusades.
10. Theory and organization of the mediaeval church.
11. Town and country life in the Middle Ages.
12. Mediaeval industry and commerce.
13. The schoolmen and the universities.
14. The Hundred Years' War.
15. The church and the councils.
16. The Italian cities.
17. The revival of learning.
18. Geographical discovery.
19. Luther and the Protestant revolt.
20. Calvin and Zwingli.
21. The Protestant Reformation in England.
22. The Jesuits and the Catholic reaction.
23. Elizabethan England.
24. Spain and the Netherlands.

25. The Puritan Revolution.
26. Colonial expansion in the sixteenth and seventeenth centuries.
27. The Thirty Years' War.
28. Europe in 1648.

Each student should possess Robinson, *Readings in European History*, two-volume edition (Ginn & Co.). The lectures will in general follow the order of topics in Robinson, *History of Western Europe* (Ginn & Co.), but there will be no formal recitations, and no text-book, other than the *Readings*, is prescribed. It will be found advantageous, however, to have at hand one or more of the best modern text-books, such as those of Robinson, West, Adams, Harding, or Myers.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

The fee for the course is \$20. (See pages 19-20.)

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Harvard 5.*

For further information address the Instructor, Professor WILLIAM MACDONALD, Brown University, Providence, R.I.

#### S10. AMERICAN HISTORY, 1763-1829 A.D.

This course deals with the history of the English colonies and of the United States from the close of the Seven Years' War to the election of Andrew Jackson, covering, therefore, the periods of the American Revolution, the Confederation, and the first forty years of government under the Constitution. It is intended as an introduction to the study of later American history, but so much acquaintance with the subject as should be gained from the study of a good modern high school text-book is presupposed. The instruction will be by lectures, supplemented by collateral reading, oral and written reports on assigned topics, study of the texts of representative documents, and discussions.

#### OUTLINE OF LECTURES AND TOPICS FOR DISCUSSION.

1. The colonies in 1763.
2. British colonial administration.
3. The Stamp Act.
4. The Townshend Revenue Acts.

5. Organization of colonial resistance.
6. The policy of coercion.
7. The first Continental Congress.
8. The failure of conciliation.
9. Military phases of the Revolutionary War.
10. The work of the second Continental Congress.
11. The period of the Confederation.
12. Formation and adoption of the Constitution.
13. Organization of the Federal administrative service.
14. Financial organization.
15. Political parties and the Constitution.
16. Foreign affairs under Washington and Adams.
17. State rights and nullification.
18. Jeffersonian Democracy.
19. Territorial expansion.
20. The question of neutral trade.
21. The War of 1812.
22. Economic reorganization after 1815.
23. Florida, Spain, and the Monroe Doctrine.
24. Slavery and the Missouri Compromise.
25. The decisions of Chief-Justice Marshall.
26. A generation of social change.
27. Tariff and internal improvements.
28. The election of 1828.

While there will be no formal recitations, students will be expected to have Hart, *Formation of the Union* (Longmans), and will also find it greatly to their advantage to possess MacDonald, *Select Charters* and *Select Documents* (Macmillan). A large library of selected books on American history will be open to members of the course, with access to the shelves.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

The fee for the course is \$20. (See pages 19-20.)

*The class will meet for at least one hour five times a week for six weeks at 11 A.M., in Harvard 5.*

For further information address the Instructor, Professor WILLIAM MACDONALD, Brown University, Providence, R.I.



## S1. CIVIL GOVERNMENT.

This course will be given by Professor MUNRO.

The general aim of this course is to analyze the leading principles of political organization and to study comparatively the governments of some of the more important modern states. The political systems to be compared are those of the United States, Great Britain, Germany, France, and Switzerland. Special attention will, however, be given to the United States. In each case particular study will be made of the principles underlying the political system, the relation of the executive and legislative organs of government, the structure of the judiciary, and the organization of political parties.

## METHOD.

The course will comprise a series of thirty lectures with collateral reading in a number of books. An endeavor will be made to indicate the main accessible sources of material for the study of the subject of civil government and, in general, to increase the bibliographical knowledge of students taking the course. Both in scope and method the course is designed to be of value to teachers of the subject in academies and schools. Each member of the course will be asked to make a special investigation of some particular phase of European or American government and to present a written report thereon. Assistance will be given through personal conferences, in the selection and use of materials for this study. The scope of the work to be covered, either by lectures or reading, is indicated in the following outline:—

## I. INTRODUCTORY.

The study of civil government, its purposes and methods; the scope and method of a school syllabus in civics; the relation of history to political science; comparative advantages of the deductive and inductive methods; sovereignty, its nature and basis; the manifestations of sovereign power; the functions of government in general; the forms of government; unitary and federal governments compared; the different forms of unitary government; Great Britain and France compared; the different forms of Federal government; Germany and the United States compared; the agencies of government; the executive, legislative and judicial organs of government;

Montesquieu's doctrine; the relation of the organs of government to one another; the flexibility of governmental organization; written and unwritten constitutions; advantages and disadvantages of each; the relation of the individual to the government in different states.

*References:* Hart, *Actual Government*, Chap. III; Dicey, *The Law of the Constitution*, Chap. III; Montesquieu, *The Spirit of Laws*, Book XI; Mill, *Representative Government*, pp. 1-52; Fairlie, *National Administration*, passim; Woodrow Wilson, *The State*, Chaps. I and II.

## II. THE GOVERNMENT OF THE UNITED STATES.

A good general knowledge of the American Constitution will be assumed. But an endeavor will be made to emphasize the salient features of the American political system as contrasted with those of British and Continental countries, to indicate methods of study and presentation, and to familiarize the student with the general literature of American government. Special attention will be given to the development of the Constitution through judicial decisions.

(a) *Federal Government.* — The sources of the Constitution; English, Dutch, and colonial sources; the Great Compromises and their influence on the general framework of the Constitution; the division of powers; exclusive and concurrent powers; expressed and implied powers; the eighteen powers of Congress; methods of arranging these; analysis of these powers; the trend of judicial decisions in the interpretation of powers; special analysis of the "borrowing" and "commerce" powers; the organs of legislation; the Senate; strong and weak points in its structure; its influence at various periods; proposals for changing the method of electing Senators; the House of Representatives; the Speaker; the Committee system; procedure compared with that of the British House of Commons; the executive organs of government; the President; comparison of the absolute and qualified vetoes in their workings; the Cabinet; the relations of the President to members of the Cabinet; the independence of the executive, how secured; the judiciary; the division of jurisdiction between federal and state courts; analysis of the Bill of Rights.

(b) *State Governments.* — Variety and unity of state organization; the admission of new states; inter-state obligations; the structure

and relations of executive, legislative, and judicial organs; the field of state activities.

(c) *Local Government*.—The organization of the rural unit; county, town, and village organization; the organization of the urban unit; types of city government; the relation of the local unit to the state.

*References*: Stevens, *Sources of the Constitution*, Chaps. VI, VII; Hart, *Actual Government*, pp. 34-64, 113-212; Bryce, *American Commonwealth*, Chaps. V-XIV; McClain, *Constitutional Law in the United States*, Part III; *The Federalist* (Lodge's edition), Articles Nos. 41-46, 52-56, 62-65, 68-72, 76-77, 80-82; Thayer, *Cases in Constitutional Law* (selected cases); Goodnow, *City Government in the United States*; Fairlie, *Local Government in Counties, Towns, and Villages*.

### III. EUROPEAN GOVERNMENTS.

This section of the course will deal, in general form, with the structure and functions of government in the chief European states, France, Germany, and Great Britain. The framework of government in each, the relations of the different organs of government to one another, and the relations of local to central administration will be discussed. The main design of this portion of the study will be to broaden the student's knowledge of the structure and functions of government in general, and to emphasize, by contrast and analogy, the salient features of the American system.

*References*: Anson, *The Law and Custom of the English Constitution*; Courtney, *The Working Constitution of the United Kingdom*; Traill, *Central Government*; Lowell, *Governments and Parties in Continental Europe*; Howard, *The German Empire*; Bodley, *France*; Vincent, *Government in Switzerland*. Members of the course will be given the opportunity of acquiring some grasp of the special literature of modern European governments.

### EXAMINATION.

At the close of the course there will be an examination on the lectures and the more important parts of the assigned reading. Students who pass this examination, and present a satisfactory written report of their investigations in the special field allotted, will be granted a certificate.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet for one hour five times a week for six weeks at 11 A.M., in Sever 7.*

The fee for this course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor W. B. MUNRO, 37 Dana Chambers, Cambridge, Mass.

### S17. MUNICIPAL GOVERNMENT.

This course will deal with the organization and functions of modern city governments, particularly in the United States, but there will also be some study of the municipal governments of the chief European countries, especially France, Germany, and Great Britain. There will be thirty lectures covering the general field, together with assigned collateral reading in various works on municipal government and administration. Among the topics discussed will be the causes of slow urban growth prior to the nineteenth century; the industrial and commercial causes of urban concentration in the United States; rural and urban units of population in their political, social, and economic aspects; the history of municipal organization since the colonial period; the influence of the federal analogy upon the development of the municipal system; the organs of city government; the relation of municipal executive and legislative organs; the structure and functions of administrative departments and boards; the municipal judiciary; municipal civil service; municipal party organizations; the relation of the city to the state; the administration of public services; municipal franchises; municipal ownership and operation of public utilities; proposals of municipal reform, etc.

While the course will concern itself mainly with American cities, the organization and activities of some typical French, German, and British cities will be briefly outlined in order that their experience may be brought to bear upon the study of American civic problems. An endeavor will be made to acquaint students with the important literature of municipal institutions, particularly in the United States, and to afford some practice in the use of official reports, departmental statements, and other municipal data.

The assigned reading will be drawn from such books as Goodnow, *City Government in the United States*; Fairlie, *Municipal Adminis-*

*tration*; Wilcox, *The American City*; Eaton, *The Government of Municipalities*; Bemis, *Municipal Monopolies*; Shaw, *Municipal Government in Continental Europe*; Meyer, *Municipal Ownership in Great Britain*; Darwin, *Municipal Trade*, etc.

At the close of the course an examination will cover the lectures and such reading as has been assigned.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet for one hour five times a week for six weeks at 12 A.M., in Sever 7.*

The fee for this course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor W. B. MUNRO, 37 Dana Chambers, Cambridge, Mass.

## HISTORICAL EXCURSIONS.

WILLIAM EDWIN DORMAN, A.B., LL.B., formerly *Assistant in History*.

GUY NEWHALL, A.B., LL.B., formerly *Assistant in Government*.

A series of excursions, open to all members of the Summer School, will be arranged to the points of chief historic and literary interest in Eastern Massachusetts. Many privileges will be open to members of these parties which are not ordinarily extended to tourists. All details of the excursions are arranged in advance. The fee in each case covers transportation, admittance fees, and lunch or dinner, if the journey lasts more than half a day. Specific announcements will be posted several days before each of the excursions.

## SCHEDULE OF EXCURSIONS.

1. *Lexington and Concord*.—(All day, probably Saturday, July 4.) Route of British Troops and Paul Revere, Black Horse Tavern, Jason Russell House, Harrington House, Munroe Tavern, Lexington Town Hall, Lexington Battle-Ground, Belfry, Buckman Tavern, Harrington and Hancock-Clarke Houses, place of Revere's capture, Merriam House, Houses of Emerson, Hawthorne, Alcott and Thoreau, Wright Tavern, Concord Antiquarian Society, Old Manse, Elijah Jones House, North Bridge and Minute Man, Sleepy Hollow



Cemetery, etc. — By special trolley cars and omnibuses; expense, about \$2.

2. *Cambridge, and Mt. Auburn.* — (Half-day, probably Wednesday, July 8.) Washington Elm and Headquarters, "Bishop's Palace," Site of Holmes House, Christ Church and Burial Ground, "Tory Row," Longfellow and Lowell houses; Mt. Auburn Cemetery. Special trolley cars or omnibuses. Price uncertain.

3. *Haverhill and Amesbury.* — (All day, probably Saturday, July 11.) "Whittier Excursion." Birthplace of John G. Whittier, the scene of "Snow-Bound," Fernside Brook, Home of Lydia Ayer, Whittier Elm, Job's Hill in East Haverhill; Whittier's Grave, Friends' Meeting House, Captain's Well and residence in Amesbury; Salisbury Beach, scene of "Tent on the Beach"; steamer on the Merrimac River, passing scenes of the following poems by Whittier: "Mabel Martin," "The Countess," "My Playmate," "Our River," "Revisited," "Exiles," "Laurels," "Home-Coming of the Bride," "June on the Merrimack," etc. — By train, special trolley cars, and steamer; expense, about \$2.50.

4. *Bunker Hill and Old Boston.* — (Half-day, probably Wednesday, July 15.) Bunker Hill Fortifications and Monument, North End of Boston, Paul Revere House, Sites of Old North Church, Frankland, Governor Hutchinson, Robert Newman, and Governor Phipps Houses, Cotton Mather House, Christ Church (Paul Revere's Signals), Copp's Hill Burial Ground. — By special trolley cars; expense, about 60 cents.

5. *Plymouth.* — (All day, probably Saturday, July 18.) National Monument to the Forefathers, Pilgrim Hall, Plymouth Court House, Burial Hill, Leyden Street, Pilgrim Spring, Cole's Hill, Winslow House, Plymouth Rock, Plymouth Harbor and Clarke's Island, South Shore of Massachusetts and Boston Harbor. — By special trolley cars, train and steamer; expense, about \$2.25.

6. *Marblehead.* — (Half-day, probably Wednesday, July 22.) Town-Hall, Lee Mansion, King Hooper House, St. Michael's Church, Elbridge Gerry House, Joseph Story House, House of Evelina Bray, John Glover House, Orne House, Burial Hill, Birthplace of Moll Pitcher, Agnes Surriage Well, Fort Sewall, Pirate's Home, British Landing Place, etc. By train and special trolley cars; expense, about \$1.20.

7. *Salem and Danvers*.— (All day, probably Saturday, July 25.) Charter Street Burial Ground, “Dr. Grimshawe House” (Home of Mrs. Hawthorne), Hawthorne’s Birth-place, Custom House, “House of Seven Gables,” “Scarlet Letter House,” “Witch House,” Records of Witch Court, North Bridge (scene of first armed resistance of the Revolution), Essex Institute, Town-Pump, Peabody Museum, George Jacobs, Page, Collins, Rebecca Nurse, and Sarah Osborn Houses, Oak Knoll (Home of Whittier), and Birth-place of Israel Putnam.— By train, special trolley cars, and omnibuses; expense, about \$2.25.

### BOOKS.

The following books will be found useful for introductory reading and study. These and many others will be reserved as a select library on local history and antiquities for the use of students in the Summer School.

#### *Historical Works.*

JUSTIN WINSOR, Editor: *Memorial History of Boston* (4 vols., Boston, 1880-81).

EDWARD G. PORTER: *Rambles in Old Boston* (Boston, 1887).

MOSES KING: *How to See Boston* (Boston, 1895).

L. POWELL, Editor: *Historic Towns of New England* (N. Y., 1898).

EDWIN M. BACON: *Historic Pilgrimages in New England* (Boston, 1898).

EDWIN M. BACON: *Literary Pilgrimages in New England* (Boston, 1902).

*Historic Guide to Cambridge*, compiled by Hannah Winthrop Chapter, D.A.R.

S. A. DRAKE: *A Book of New England Legends and Folk-Lore in Prose and Poetry* (Boston, 1884).

S. A. DRAKE: *Historic Mansions and Highways about Boston* (Boston, 1899).

S. A. DRAKE: *Nooks and Corners of the New England Coast* (N. Y., 1875).

Three inexpensive and useful books which it would be well to own are:—

EDWIN M. BACON: *Walks and Rides in the Country round about Boston* (Boston, 1897); several maps.

J. W. FREESE: *Historic Houses and Spots in Cambridge and Near-by Towns* (Boston, 1897); excellent heliotypes.

S. T. PICKARD: *Whittier Land* (Boston, 1904); a charming description of the Whittier country by his authorized biographer.

*Historical Novels and Poems.*

JANE G. AUSTIN: *Standish of Standish*; *A Nameless Nobleman*; *Dr. Le Barron and his Daughters*.

EDWARD L. BYNNER: *Agnes Surriage*; *Zachary Phipps*.

JAMES FENNIMORE COOPER: *Lionel Lincoln*.

LYDIA MARIA CHILD: *The Rebels*.

NATHANIEL HAWTHORNE: *House of the Seven Gables*; *Dr. Grimshawe's Secret*; *Rill from a Town Pump*; *Endicott and the Red Cross*; *Mosses from an Old Manse*; *The Scarlet Letter*.

OLIVER WENDELL HOLMES: *Grandmother's Story of the Battle of Bunker Hill*.

LUCY LARCOM: *A Gambrel Roof*.

HENRY W. LONGFELLOW: *Courtship of Myles Standish*; *Giles Corey (New England Tragedies)*; *Paul Revere's Ride*.

JOHN G. WHITTIER: *Snow-Bound*; *Telling the Bees*; *In School Days*; *The Countess*; *The Preacher*; *Prophecy of Samuel Sewall*; *Witch of Wenham*; *Home-Coming of the Bride*.

---

**LATIN.** (See page 46.)

---

**MATHEMATICS.**

JAMES LEE LOVE, A.M., *Assistant Professor of Mathematics*.

WILLIAM FOGG OSGOOD, Ph.D., *Professor of Mathematics*.

GEORGE WILLIAM EVANS, A.B., *Principal, Charlestown High School, Charlestown, Mass.*

ARTHUR BOWES FRIZELL, A.M., *Student at Göttingen University, formerly Instructor in Mathematics, Harvard University*.

WILLIAM CHARLES BRENKE, S.M., Ph.D., *Assistant Professor of Mathematics, University of Nebraska, formerly Instructor in Mathematics, Harvard University*.

Five courses in Mathematics are offered, embracing *Advanced Algebra*, *Solid Geometry*, *Plane Trigonometry*, *Plane Analytic Geometry*, and an introductory course in *Differential and Integral Calculus*. These courses are described below. Work will begin in each course on Wednesday, July 1, and end on Wednesday, August 12.

Class-room exercises, consisting of lectures and recitations, and occupying about an hour and a half each, will be held five times a week.

Text-books, when not named below, will be announced at the first meeting of the course; and, if necessary, may be purchased at once from Cambridge book-sellers. The student is advised to bring from home any good text-books he may possess covering the subject he proposes to study.

The fee for each course is \$20. (See pages 19-20.)

For a course on Methods of Teaching Mathematics, see page 56.

#### S.4. PLANE TRIGONOMETRY.

This course is intended for persons who have not studied trigonometry or for those who wish to review it. It will be found serviceable for teachers of algebra and geometry, and for those preparing to teach trigonometry.

A good knowledge of plane geometry and of elementary algebra is required for admission to this course. It will cover the usual topics, such as measurement of angles, the trigonometric functions, use of trigonometric and logarithmic tables, solution of triangles, applications to heights, distances and areas, trigonometric identities, inverse trigonometric functions, and trigonometric equations.

The fundamental formulae of the subject will be carefully deduced, and familiarity with them secured by numerous exercises and applications. Trigonometry is an indispensable introduction to higher mathematics as well as a most serviceable tool of investigation in applied mathematics; and the aim of the instructor will be to present the subject in such way as to make it serve both these ends.

This course is the equivalent of Mathematics *A* or Engineering *1b* of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees in Harvard University, or in lieu of the entrance requirement in Plane Trigonometry for Harvard or Radcliffe College. (See page 15.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 14.*

The fee for the course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor W. C. BRENKE, 1833 L Street, Lincoln, Nebraska.

## SE. SOLID GEOMETRY.

This course is intended for teachers of geometry, and for students who have done good work in plane geometry. It is not open to students of Harvard College or the Lawrence Scientific School who are "conditioned" in plane geometry. No preparation will be necessary beyond that specified under Elementary Algebra and Plane Geometry in the requirements for admission to Harvard College.

Some one of the modern text-books of Elementary Geometry will be found convenient for reference, though none of them will be strictly followed in the work of the course. The ground to be covered is in part indicated by the New England List of Theorems in Elementary Geometry (Ginn), but will also include original exercises, numerical mensuration, and the correlation of the subject matter with other branches of school Mathematics. Some care will be used in the application of the Theory of Limits, and in the establishment of systematic arrangements of theorems.

This course is the equivalent of Mathematics *E* of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees in Harvard University, or in lieu of the entrance requirement in Solid Geometry for Harvard or Radcliffe College. (See page 15.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 24.*

The fee for the course is \$20. (See pages 19-20.)

For further information address the Instructor, Mr. GEORGE W. EVANS, Principal, Charlestown High School, Boston, Mass.

## SD. ADVANCED ALGEBRA.

This course will be serviceable to teachers or students pursuing any branch of pure or applied mathematics, and is open to anyone who has satisfied the usual college entrance requirement of "algebra through quadratics."

The principal subjects to be treated are those now usually required for the college entrance examination in advanced algebra, among which will be permutations and combinations; complex numbers and their graphical representation; determinants, including the solution of linear equations; the theory of algebraic equations, and Horner's method. A considerable part of the time will be



devoted to the theory of equations and to simultaneous equations. There will be also a brief discussion of arithmetical and geometrical progressions, and of the binomial theorem. The course will be conducted by informal lectures, Fine's *College Algebra* being used as the principal source of problems.

This course is the equivalent of Mathematics *D* or Engineering *1a* of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees, or in lieu of the entrance requirement in Advanced Algebra in Harvard or Radcliffe College. (See page 15.)

*This class will meet for an hour and a half five times a week for six weeks at 9 A.M., in Sever 14.*

The fee for the course is \$20. (See pages 19-20.)

For further information address the Instructor, Mr. A. B. FRIZELL, care of Summer School, 4 Lawrence Hall, Cambridge, Mass.

### S.B. PLANE ANALYTIC GEOMETRY.

This course will be serviceable for teachers of algebra, geometry, trigonometry, or physics; also for persons preparing to teach analytic geometry; and for students in colleges or scientific schools who are preparing to take up differential and integral calculus. In order to do satisfactory work in it the student should have a good knowledge of plane geometry, of algebra through quadratic equations, and of plane trigonometry.

The work in analytic geometry will include a study of the straight line, circle, ellipse, parabola, and hyperbola, in Cartesian and polar coördinates.

Much stress will be laid on the solution of problems and exercises, and a considerable amount of written work will be expected from the student.

This course is the equivalent of Mathematics *B* or Engineering *1d* of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 30.*

The fee for the course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor J. L. LOVE, 16 Francis Ave., Cambridge, Mass.

## S2. CALCULUS.

This course is intended for teachers of mathematics, and for students who wish to use a portion of the vacation to prepare for advanced courses in pure or applied mathematics in which the calculus is required.

A thorough knowledge of algebra, plane trigonometry, and of plane analytic geometry is required for admission to this course. Persons contemplating taking it are requested to write to the instructor, or to see him, before the course begins, describing fully their mathematical training, in order that he may advise them whether they can profitably take the course.

The theory of the calculus will be given in informal lectures. The elements of differentiation and of integration will be thoroughly treated. Numerous applications will be made to problems in geometry and physics, including problems in maxima and minima, areas and lengths of plane curves, surfaces and volumes of solids, centres of gravity, moments of inertia, fluid pressures, etc. Osgood's *Differential and Integral Calculus* (Macmillan, 1907) will be used as a text.

The aim of the course will be to lay a firm foundation for further study of the calculus. No previous study of the subject will be required of those who enter the course.

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 20.*

The fee for the course is \$20. (See pages 19-20.)

For further information address Professor W. F. OSGOOD, 74 Avon Hill St., Cambridge, Mass.

---

**MECHANICS.** (See page 60.)

**METAPHYSICS.** (See page 109.)

**MUNICIPAL GOVERNMENT.** (See page 94.)

---

**MUSIC.**

JOHN PATTEN MARSHALL, *Assistant Professor of Music, Boston University.*

Two courses in Music will be given in 1908, beginning on Wednesday, July 1, and ending on Wednesday, August 12.

No special technical training in vocal music is to be given in these courses, but they will be carefully designed with reference to the growing importance of music teaching in the secondary schools. The principles indispensable to a sound knowledge of music will be analyzed and the most effective modern methods of presenting these principles will be thoroughly discussed.

## S1. HARMONY AND SIMPLE COUNTERPOINT.

The work in this course is similar to the work done in Music 1 in Harvard College, but as much contrapuntal treatment will also be introduced as may be found practicable. The course is designed for persons who wish to acquire a thorough knowledge of the grammar of music and of the main laws of musical construction. These principles are taught and explained by lectures and conferences. Facility in applying them is obtained by means of exercises written by the student to given melodies in soprano and bass. These exercises are criticized by the instructor and then revised or rewritten in accordance with his suggestions. Original work, such as part-songs, songs for solo voice and simple pieces for pianoforte, is encouraged and will receive careful criticism. Considerable time is spent in analyzing the works of classical composers and in tracing the principles according to which they worked. The object is to learn music as far as possible at first hand from music itself and not from any text-books, however good.

It is understood that all who take Course S1 shall be familiar with the rudiments of musical notation and with scale formation, and shall have a fair degree of facility in playing either the pianoforte, the organ, or possibly the violin.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*This class will meet on Tuesdays, Wednesdays, Thursdays, and Fridays, from 9 to 10.30 A.M., in Holden Chapel.*

The fee for this course is \$20. (See pages 19-20.)

For information address the Instructor, Professor J. P. MARSHALL, 688 Boylston Street, Boston, Mass.

#### S4. THE APPRECIATION OF MUSIC: ANALYTICAL STUDY OF MASTERPIECES FROM THE POINT OF VIEW OF THE LISTENER.

This is a more general course than Course S1, and assumes no special technical knowledge of music on the part of the student. Its object is to promote an intelligent appreciation of the chief masters and masterpieces of music, from the eighteenth century to the present day. The general principles of musical art and its similarities and contrasts with other arts will be discussed, and collateral reading on the historical schools of music and the musical influences under which the various masters developed will be suggested. Students in this course will have free access to an Aeolian Orchestrelle and to a Pianola. In this way a wide range of literature for orchestra and for string quartet may be profitably studied.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*This class will meet on Tuesdays, Wednesdays, Thursdays, and Fridays, from 11 A.M. to 12.30 P.M., in Holden Chapel.*

The fee for this course is \$20. (See pages 19-20.)

For further information address the Instructor, Professor J. P. MARSHALL, 688 Boylston St., Boston, Mass.

---

#### ORAL READING. (See page 134.)

---

#### PHILOSOPHY AND PSYCHOLOGY.

JOSIAH ROYCE, Ph.D., LL.D., *Professor of the History of Philosophy.*

RALPH BARTON PERRY, Ph.D., *Assistant Professor of Philosophy.*

ROBERT MEARNES YERKES, Ph.D., *Instructor in Comparative Psychology.*

CHARLES SCOTT BERRY, Ph.D., *Assistant in Psychology.*

WILLIAM JAMES MUSGROVE, A.M., and JACOB LOEWENBERG, *Assistants in Philosophy.*

#### PHILOSOPHY.

Four courses in Philosophy will be given in 1908, beginning Wednesday, July 1, and closing Wednesday, August 12: (1) A General Introduction to Philosophy, intended to acquaint the student with the tradition, standpoint, and fundamental problems of philosophy.

(2) A General Introduction to Ethics, intended especially to lay stress upon those problems of Ethics which stand in a close relation to the teacher's profession. (3) A Brief History of Modern Philosophy, dealing with the great thinkers since the Renaissance, and the bearing of their ideas on the development of Religion, Education, Art, and Science. (4) Introduction to Metaphysics. All of these courses will continue throughout the term of the school. Any one of them may be taken alone; none but (4) presupposes any previous study of Philosophy.

For students of Harvard University, except Seniors, who fulfil the conditions stated on pages 15-16, each of these courses may be counted as a half-course towards the degree of A.B. or S.B.; but neither (1) nor (2) may be counted by a student who proposes to count Philosophy *D*; (3) may not be counted by a student who proposes to count Philosophy *B*; and (4) may not be counted by a student who proposes to count Philosophy 9.

For *Seniors in Harvard College* neither of the Courses (1), (2), nor (3), alone, can be counted towards a degree; but two together will be counted as a half-course.

Students of Harvard University who have taken two or more of these courses, or any of these courses together with one of the psychological courses, will be admitted to the higher courses, for Undergraduates and Graduates, offered by the Division of Philosophy.

The fee is \$20 for each course. (See pages 19-20.)

## S1. GENERAL INTRODUCTION TO PHILOSOPHY.

It is the purpose of this course to introduce the student to the tradition, literature, and problems of philosophy. No previous study of the kind will be assumed. The lectures will deal, in the first place, with the general problem which distinguishes philosophy from other interests; with the philosophical standpoint, method, and habit of mind. In this connection the relation of philosophy to common sense, to morals, art, science, and religion, will be discussed at some length. The remainder of the course will be devoted to two broad problems. The first of these is the problem of man, embracing his natural origin, his distinctive capacities, the conditions and instruments of his knowledge, the meaning and implications of his moral powers. The second is the problem of God,



embracing conceptions of the Absolute Being, proofs of God, the unity of the world, and the meaning of evil.

In discussing these questions the lecturer will expound and criticise the doctrines that have been most important in the history of human thought, such as materialism, subjectivism, and idealism. The course is intended to give to teachers or other students a just estimate of the importance of philosophy for life, to give them some working knowledge of the results of philosophical investigations, and to enable them to read the works of contemporary thinkers with intelligence and a measure of critical independence.

The collateral reading will be mainly in Perry's *Approach to Philosophy* and Fullerton's *Introduction to Philosophy*. Among the other books in which reading will be assigned are James's *Will to Believe*, and *Pragmatism*; Paulsen's *Introduction to Philosophy*; and Royce's *The World and the Individual*.

This course is the equivalent of Philosophy D of the Harvard Courses of Instruction, and is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The course will meet for one hour five times a week at 10 A.M., in Emerson H.*

The fee is \$20. (See pages 19-20.)

For further information concerning this course address the Instructor, Professor RALPH BARTON PERRY, 104 Lake View Ave., Cambridge, Mass.

## S2. AN INTRODUCTION TO ETHICS WITH ESPECIAL REFERENCE TO THE INTERESTS OF TEACHERS.

At the outset of the course, the nature of the problems of Ethics will be defined. Ethical philosophy is the philosophy of Conduct, and is concerned with the fundamental differences between right and wrong, between good and evil, between what ought to be and what ought not to be in the world of practical activity. Or again, Ethics may be defined as the part of philosophy which is concerned with the deepest reasons for conduct, and for the choice of ideals.

After introducing the topic of the course by a development of such reflections as the foregoing suggests, the problems of ethics which are to be specially emphasized in this course will be propounded. As this is especially a course in Ethics for teachers, the choice of these problems will be as follows:—

1. Teachers, in recent times, are required by their profession to take account, so far as possible, of the individual needs and powers of pupils, and to train a pupil to fill his own individual place in the world. In the course of this undertaking the question constantly arises: How far is submission to authority, and how far is individual self-expression, the principal ideal of conduct for any human being? How far is obedience to the right law, and how far is a free chance to assert one's own rights, the main moral purpose of life? How far is morality the expression of the will of the individual? How far is morality conformity to the "collective will," or to the "eternal fitness of things," or to the "divine law"? These questions may be said to constitute the problems of the "Ethics of Individualism." And the issues summed up in this expression will be made prominent in the course.

2. The teacher is constantly concerned with the welfare of his pupils. The question: What constitutes welfare? is identical with the problem so prominent in ancient philosophy: What constitutes the "highest good"? This problem will be considered in connection with the foregoing problem of individualism.

3. The teacher has to be, amongst other things, a moral trainer. The question arises: What relation has the moral training of the young to the conscious statement and consideration of moral principles on the part of the pupils themselves? That is, again, what relation has the practical problem of the moral training of the young to the teaching of ethical doctrines? How far, and when, should one teach the pupil *why* he ought to do right? How far, on the contrary, should one confine one's self, as a moral trainer, to inducing the young pupil, through example, and through the establishment in him of good habits, to *do right without reasoning upon the subject*? How far can right conduct be taught at all *without* teaching the reasons why one ought to do right? When one actually begins to appeal to the pupil's reason, *what* reasons should first be brought to his notice? The problem of "the moral training of the young" can be considered, in this course, only in its most general aspect; and, in the present state of the art of education, this is a problem rather for conference and for discussion than for dogmatic decision. But this problem has some philosophical aspects which belong here, and which will be briefly considered.

4. Finally, the problem as to the relations between Morality and Religion is especially interesting to the teacher, since, in our country, the possibility of the separation of moral training from religious training is forced upon the teaching profession by the demands of our social system, and by the present state of the religious problems themselves. The question, however, as to what the relations between morality and religion ought to be, is a typically philosophical question; and, as such, belongs in this course. It will receive considerable attention.

Royce's *Philosophy of Loyalty*, a volume just published, will be used as a text-book in the course. Students who wish to undertake the course are also advised to read Professor George H. Palmer's two books, *The Field of Ethics*, and *The Nature of Goodness*, as an introduction to the whole subject.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The course will meet for one hour five times a week at 9 A.M., in Emerson A.*

The fee for the course is \$20. (See pages 19-20.)

For further information concerning this course address the Instructor, Professor JOSIAH ROYCE, 103 Irving St., Cambridge, Mass.

### S3. HISTORY OF MODERN PHILOSOPHY.

This course will provide a brief survey of the history of modern thought, beginning with the Renaissance and terminating in the opinion and broader intellectual issues of the present age. No previous study of the kind is assumed. The lectures will deal primarily with the history of philosophy proper, but only because those general ideas which pervade human civilization as a whole are here concentrated and defined. Thus in connection with the study of Bacon, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Fichte, Hegel, and Spencer, allusion will constantly be made to the state of religion, education, art, and science in the periods which these thinkers represent.

It is intended that members of the course shall obtain not only historical, but intellectual perspective, through observing the coördination of the various interests that make up civilization, and the dominance in different ages of characteristic fundamental ideas.

The collateral reading will be mainly in Royce's *Spirit of Modern Philosophy*, and in the writings of the great modern philosophers. Other reading will be selected from such books as Pater's *Renaissance*, Matthew Arnold's *Literature and Dogma*, Santayana's *Life of Reason*, and Lowes Dickinson's *Modern Symposium*. All assigned reading will be in English.

This course is the equivalent of Philosophy *B* of the Harvard Courses of Instruction, and is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The course will meet for one hour five times a week at 11.15 A.M., in Emerson H.*

The fee is \$20. (See pages 19-20.)

For further information concerning this course address the Instructor, Professor RALPH BARTON PERRY, 104 Lake View Ave., Cambridge, Mass.

#### S4. METAPHYSICS.

This course is introductory to Metaphysics, and is intended for students who have already taken, as an introduction to Philosophy, at least the equivalent of one half-course of elementary work in philosophy as given in Harvard University, or who have taken one course in philosophy, in previous years, in the Summer School. The course in Metaphysics is equivalent to the first half-year's work in the course which appears as Philosophy 9 in the programme of the Faculty of Arts and Sciences; and, as an advanced course in philosophy, this course may either be counted as one half-course towards the A.B. degree, or may form part of a plan of study for the degree of Master of Arts in Harvard University, subject to the rules and the consent of the Administrative Board of the Graduate School. The course will, however, also be adapted to the needs of students of philosophy who are not regular members of Harvard University; and is intended as an introduction to some of the more important problems of modern metaphysical inquiry.

The text-books of the course will be Professor William James's *Pragmatism* and Royce's *The World and the Individual*. Students will read these works, and will prepare some reports upon their reading, as well as a thesis upon an assigned metaphysical problem. The lectures will discuss the questions with which the text-books deal. The main purpose of the course is to help the student to

understand what is meant by modern Idealism; to understand the relations of idealism to opposing views; and to see how the idealistic interpretation of human experience is related to common sense, to some of the problems suggested by modern scientific inquiry, and to the interests which are represented by religion. In addition, students will be encouraged to formulate their own views of the problems of the course, and to do what they can, in the time, to form a somewhat independent estimate of the merits of the philosophical questions which will be emphasized.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13-19.)

*The course will meet for one hour five times a week for six weeks at 10.15 A.M., in Emerson A.*

The fee for the course is \$20. (See pages 19-20.)

For further information concerning this course address the Instructor, Professor JOSIAH ROYCE, 103 Irving St., Cambridge, Mass.

### PSYCHOLOGY.

Two courses in Psychology will be given under the direction of Dr. YERKES in the Psychological Laboratory, in Emerson Hall: one, a lecture course in Descriptive Psychology; and the other, a lecture and laboratory course in Applied Psychology.

Either of these courses may be taken alone; but as preparation for the Applied Psychology students should have either the Descriptive Psychology or its equivalent.

Students who have taken both of these courses, or one of them with one of the philosophical courses above, will be admitted to the higher courses, for Undergraduates and Graduates, offered by the Division of Philosophy.

The Psychological Library in Emerson Hall will be open to members of the classes in Psychology.



## DESCRIPTION OF COURSES.

## S1.—DESCRIPTIVE PSYCHOLOGY. LECTURES, DEMONSTRATION EXPERIMENTS, AND CLASS DISCUSSIONS CONCERNING THE PRINCIPLES, METHODS, AND VALUES OF PSYCHOLOGY.

The aim of this course is to give as simply and as clearly as possible an account of the growth of the mind, of the way in which it works, of its relations to the life of action, and of ways in which it may be trained.

Each member of the class is asked to observe certain of his own mental processes with a view to gaining knowledge of the nature of the important varieties of experience. The lectures constitute a systematic discussion of the important facts and methods of psychology. To render the materials under consideration intelligible to the beginner and interesting to all who take part in the work of the course, demonstration experiments are performed before the class almost daily. The lectures themselves are planned with the purpose of indicating the chief facts of mental development in the child and in the race, the characteristics of the various kinds of mental processes, the relation of mind to nature and its meaning for human life.

Throughout the lectures special attention is given to the significance of the facts under discussion, and to the training of the members of the course in methods of studying consciousness. In addition to presenting the groundwork of the science of psychology, the course offers a discussion of the conditions which influence the growth and decay of our minds and of the means whereby desirable educational results may be attained.

Judd's *General Introduction to Psychology* is used as a text-book in this course, and for supplementary reading are recommended Royce's *Outlines of Psychology*, Calkins' *Introduction to Psychology*, Titchener's *Outline of Psychology*, and Münsterberg's *Psychology and Life*.

This course is the equivalent of Philosophy *E* of the Harvard Courses of Instruction, and is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. (See page 15.)

*The class will meet five times a week for six weeks from 9 to 10 A.M., in Emerson 27.*

The fee for the course is \$20. If taken with the course in Applied Psychology the fee for the two will be \$40. (See pages 19-20.)

For further information concerning this course address the Instructor, Dr. ROBERT M. YERKES, 30½ Mellen Street, Cambridge, Mass.

## S2.—APPLIED PSYCHOLOGY. LECTURES, LABORATORY EXERCISES, DISCUSSIONS, AND READING.

The aim of this course is to exhibit the practical applications of the most important psychological facts and principles, and to aid teachers, physicians, lawyers, ministers, and students of psychology to appreciate the value of psychology for daily life, and to make effective use of their knowledge of the subject in their professional work.

The course consists of six parts:—

I. THE FACTS AND PRINCIPLES OF SENSE, with demonstrations of methods of testing sight, hearing, and the chemical senses, and lectures on the practical aspects of the care and education of the senses.

II. THE INTERPRETATION OF SENSE DATA (perception), with demonstrations of the influence of mental content, or past experience, upon our interpretation of present sense data, and a study of some of the conditions which determine our mental attitudes. Illusions, delusions, and hallucinations are topics for discussion. Here again, as throughout the course, the instructor indicates, in his lectures, ways of developing and improving the ability of the individual to interpret sense experience.

III. MEMORY AND IMAGINATION AS ASPECTS OF MENTAL LIFE. Perceptual and memory types are exhibited in the class exercises, and the influence of various environmental factors on memory are demonstrated. Similarly the rôle of the creative imagination is studied in relation to the conditions which modify it and to its significance in human life. In the lectures attention is directed particularly to the problems of the development and training of the imagination.

IV. FORMS OF ACTIVITY AND THEIR RELATIONS TO MENTAL STATES. In this connection the development and modification of

behavior is examined. It is the purpose of this section of the course to exhibit the essential features of automatism, habit, and intelligence, and to demonstrate certain of the powerful influences which are constantly at work as moulders of our lives. These facts are studied that we may learn how to control behavior in ourselves and in others by the aid of psychological principles.

V. SUGGESTION AND IMITATION. In this connection the laws of suggestion are demonstrated, and methods of measuring suggestibility are tested. The relation of suggestion to hypnosis, as well as to normal states, is discussed. Special attention is given in this portion of the course to the applications of psychology to law. The various forms of imitation are examined and their significance is considered.

VI. WILL. The development and control of voluntary action is studied. Special attention is given to volition in its relations to habit-formation, to motor education, and the efficiency of methods of training.

The lectures of the course are intended primarily to introduce and supplement the class exercises, but during the last two weeks of the term a special course of ten lectures is given in which the principal applications of psychology to the professions of teaching, medicine, law, art, and religious and social service are presented and discussed. These lectures serve as a résumé and review of the chief results of the laboratory exercises, and, at the same time, they afford the instructor an opportunity to give the class a general view of the subject.

This course is accepted as a half-course for a degree in Harvard University. (See pages 13-19.)

*The class will meet five times a week for six weeks from 10 A.M. to 12 M., in Emerson 27.*

The fee for the course is \$25. If this course is taken with the course above in Descriptive Psychology, the fee for the two courses is \$40. (See pages 19-20.)

For further information concerning this course, address the Instructor, Dr. ROBERT M. YERKES, 30½ Mellen Street, Cambridge, Mass.

## PHYSICAL EDUCATION.

DUDLEY ALLEN SARGENT, M.D., S.D., *Director of the Hemenway Gymnasium.*

Though these courses are designed especially for instructors engaged in teaching through the winter, and to supplement courses given during the school year, they are open also to all students and others seeking their personal improvement either by exercise or in learning how to look after their physical welfare.

The exercises are conducted in the Hemenway Gymnasium, on the adjoining grounds, and in the lecture halls of the University, under the direction of Dr. D. A. SARGENT, who takes part in both the theoretical and practical instruction.

*Attention is called to "Special Features for 1908," p. 116.*

Some of the Special Lecturers have been: —

- Dr. MARSHALL H. BAILEY, *Medical Visitor*, Harvard University.
- Dr. S. P. BEEBE, M.S., Ph.D., Cornell Medical School, New York, N.Y.
- Dr. CLARENCE J. BLAKE, *Professor of Otology*, Harvard Medical School.
- Dr. ELLIOTT G. BRACKETT, *Instructor in Orthopedics*, Harvard Medical School, and *Surgeon*, Children's Hospital, Boston.
- Dr. EDWARD H. BRADFORD, *Professor of Orthopedics*, Harvard Medical School, and *Surgeon*, Children's Hospital, Boston.
- Dr. WALTER CHANNING, *Director*, Private Hospital for Mental Diseases, Brookline.
- Miss MARY EMMA CONNER, B.S., *Instructor in the Philosophy of Education*, Dr. Sargent's Normal School, Cambridge.
- Mr. W. L. COOP, *Mechanical Engineer*, Narragansett Machine Co., Providence, R. I.
- Dr. GEORGE W. FITZ, formerly *Assistant Professor of Physiology and Hygiene* and *Medical Visitor*, Harvard University.
- Dr. EDWARD M. HARTWELL, *Secretary*, Bureau of Municipal Statistics, Boston.
- Dr. FRED E. LEONARD, *Professor of Physiology* and *Director of Gymnasium*, Oberlin College, Oberlin, Ohio.
- Dr. ROBERT W. LOVETT, *Instructor in Orthopedics*, Harvard Medical School, Boston.
- Dr. JAMES H. MCCURDY, *Instructor in Physiology*, International Y. M. C. A. Training School, Springfield.
- Dr. R. TAIT MCKENZIE, *Physical Director*, University of Pennsylvania.
- Dr. GEORGE L. MEYLAN, *Physical Director*, Columbia University.
- Dr. MARY REES MULLINER, *Specialist*, Medical Gymnastics, Boston.
- Mr. HARTVIG NISSEN, *Supervisor of Physical Training*, Public Schools, Brookline.

- Mr. ARTHUR ORLO NORTON, A.M., *Assistant Professor of the History and Art of Teaching*, Harvard University.
- Dr. PEIRSON S. PAGE, *Physical Director*, Phillips Academy, Andover.
- Dr. JANE KELLY SABINE, *Assistant*, N. E. Hospital for Women and Children, Boston.
- Mr. CARL L. SCHRADER, *Instructor in Gymnastics*, Harvard University, and Dr. Sargent's Normal School, Cambridge.
- Dr. MYLES STANDISH, *Assistant Professor of Ophthalmology*, Harvard Medical School, Boston.
- Dr. SAMUEL G. WEBBER, *Consulting Physician*, Adams Nervine Asylum; *Lecturer on Nervous Diseases*, Tufts College Medical School, Boston.

The Special Instructors in 1907 were:—

- Mr. EMILE A. BARRIER, *Physical Director*, Y. M. C. A., Hyde Park.
- Miss LILLIAN H. BRUCE, *Physical Director*, Y. W. C. A., Savannah, Ga.
- Mr. LOUIS R. BURNETT, *Physical Director*, Public Gymnasium, Milton.
- Mr. WILBUR W. CARD, *Physical Director*, Trinity College, Durham, N.C.
- Mrs. ALICE P. CODDINGTON, *Pianist*, Boston.
- Miss IDA CROWLEY, *Pianist*, Cambridge.
- Mr. FRANCIS DOHS, *Instructor in Gymnastics*, U. S. Military Academy, West Point, N.Y.
- Mr. CHRISTIAN EBERHARD, *Instructor in Gymnastics*, Boston Athletic Association, Boston.
- Miss DOROTHY ELLINGWOOD, *Physical Director*, Cook County Normal School, Chicago, Ill.
- Mrs. MAY L. FARWELL, *Pianist*, Boston.
- Mr. MELVIN B. GILBERT, *Principal*, The Gilbert Normal School of Dancing and Esthetic Gymnastics, Boston.
- Miss SUSAN H. GILMAN, *Instructor in Physical Training*, The Misses Masters School, Dobbs Ferry, N.Y.
- Mr. ERNEST HERMANN, *Instructor in Swedish Gymnastics*, Dr. Sargent's Normal School, Cambridge.
- Mr. JAMES G. LATHROP, *Instructor in Athletics*, Harvard University.
- Mr. CHARLES B. LEWIS, *Physical Director*, Tufts College.
- Miss ANNA SOPHIA MACDUFFEE, *Instructor in Physical Training*, Ingle-side School, New Milford, Conn.
- Mr. J. LEONARD MASON, *Instructor in Physical Training*, University of Pennsylvania, Philadelphia, Pa.
- Mr. HOWARD R. REITER, *Physical Director*, Wesleyan University, Middletown, Conn.
- Mr. CARL L. SCHRADER, *Instructor in Gymnastics*, Harvard University, and Dr. Sargent's Normal School, Cambridge.
- Miss HARRIET M. TOLMAN, *Instructor*, Dr. Sargent's Normal School, Cambridge.
- Mr. C. B. VAN WYCK, *Recorder*, Hemenway Gymnasium, Cambridge.



The Student Assistants in 1907 were: —

Miss ELIZABETH E. ANDREWS, Mr. ERNEST ARTELL BLOOD, Miss E. KATHARENA COOP, Miss EMILY B. CORNISH, Mr. GEORGE E. FRAZER, Mr. LEO C. KNEBEL, Mr. ELMER S. SHRINER.

Special lecturers and instructors for the summer session of 1908 will be announced later.

## SPECIAL FEATURES FOR 1908.

### AMERICAN SCHOOL DANCES.

Mr. M. B. GILBERT, *Originator and Instructor*.

The growing demand for Folk Dances and rhythmic exercises in the secondary schools, and the lack of any such dances or exercises adapted to our American institutions, have induced Mr. GILBERT to compose a new series of rhythmic steps and movements which he has called *American School Dances*. They are simple, joyous exercises, arranged in progressive and repeated series, set to inspiring music, and adapted to the use of large classes.

### RHYTHMICAL GYMNASTICS. — DALCROZE METHOD.

Mr. C. L. SCHRADER, *Instructor*.

A great deal of interest is manifesting itself in Europe over the contribution to physical education by Jaques Dalcroze in the form of "Rhythmical Gymnastics." Dalcroze, a Swiss composer, conceived the idea that bodily activity might be rendered serviceable in the musical training of children. The extent to which he developed this conception suggested to him that the exercises thus arranged were of great educational significance, aside from being an aid to musical instruction. It will be of interest to teachers and students of physical education to familiarize themselves with this work.

### SCHOOL PLAYS AND GAMES.

Mr. LOUIS R. BURNETT, *Instructor*.

The call for teachers to superintend school playgrounds and public play centres, and to direct the vacation exercises of public school children, has induced the director of the Physical Training Department of the Harvard Summer School to make a special feature of plays and games during the coming summer.

## SPECIAL CIRCULAR.

The following abstract is taken from the special circular on Physical Training to which the reader is referred for a more detailed description of the work of the courses. See page 125.

## ELEMENTARY AND ADVANCED COURSES.

The development of the subject of Physical Training during the past few years has made it impossible to cover the ground, even superficially, in a single season.

The improved facilities at the Hemenway Gymnasium enable the University to offer four full courses in the theory and four in the practice of Physical Training each summer.

The first course is for beginners or for students who have had little experience; the second course is for intermediate pupils or for those who are well grounded in the elementary work; the third course is for advanced pupils; and the fourth course is for graduate students who wish to acquire a teacher's experience and to specialize in those subjects for which they are best fitted.

## STUDIES AND EXERCISES OFFERED.

The work of each year may be selected from the following lists and counted towards the full certificate as explained below.

## FIRST YEAR.

*Theory.*

Lectures and Recitations on the elementary essentials of Anatomy, Physiology, Histology, Physics, and Chemistry, as applied to Physical Training.

*Practice.*

Primary and Grammar School Exercises, Calisthenics and Light Gymnastics, including drills in Chest Weights, Wooden and Iron Dumb-bells, Facings and Marching in Military Drill, Free Developing Exercises, Elementary Fencing, Dancing Steps, and Swedish Free Exercises. Elementary Heavy Gymnastics, including four series of progressive exercises on Low and High Horizontal Bars, Floor Parallel and Suspended Parallel Bars, Vaulting Horse, Buck, Rings, and Mat. Gymnastic Games, Delsarte Exercises, and Voice Training, expert instruction in Swimming, Diving, and Basket-ball.

## SECOND YEAR.

*Theory.*

Lectures and Recitations in the elements of Applied Anatomy, Anthropometry, and the Physiology of Exercise. Lectures and Practice in First Aid to the Injured. Brief History of Physical Education. Practical Talks on Personal Hygiene. Lectures on the Philosophy of Exercise and the Different Systems of Physical Training.

*Practice.*

Intermediate courses in Light Gymnastics, including drills in Wands, Wooden Dumb-bells and Indian Clubs. Dancing, Fencing, Figure Marching, Swedish Gymnastics, and School Desk Exercises. Developing Appliances. Elementary Heavy Gymnastics and Athletics for Women, Intermediate Heavy Gymnastics for Men, including Exercises on the Parallel and Horizontal Bars, Vaulting Horse, Buck, Rings and Mat. Voice Training. Gymnastic Plays and Games. Expert instruction in Golf, Tennis, and Hand-ball.

## THIRD YEAR.

*Theory.*

Elementary Principles of Psychology as Applied to Physical Training. Outline of Physical Examinations and Examiner's Report. Lectures on Massage and its Applications. Important Epochs in the History of Education. Spinal Curvature and its Treatment by Gymnastics, with Hospital Practice. Preliminary Tests of Vision and Hearing. Conservation of Energy in the Human Body as determined through the Chemistry of Nutrition. Essential Points in the Study of Children. Training in Theory and Practice. Organization, Construction, and Equipment of Gymnasiums and Athletic Grounds.

*Practice.*

Advanced Light and Heavy Gymnastics, including drills in Wooden and Iron Dumb-bells and Chest Weights. Horizontal Bar, Parallel Bars, Horse, Buck, Rings, etc. Advanced Fencing, Dancing, and Athletics. Boxing, Swimming, and the Holds and Breaks in Wrestling. Intermediate Athletics for Women, including Running, Jumping, Hurdling, and Practice with Six-pound Shot. Corrective Gymnastics. Advanced Voice Training, Plays and Games, Practice

in Measuring, Testing, Tabulating and Charting. Expert instruction in Rowing Strokes, and Foot-ball Plays and Formations.

#### FOURTH YEAR.

##### *Theory.*

Some of the Essential Elements in Physical Diagnosis. Simple School Experiments in Physiology and Psychology. Kinesiology, Mechanotherapy, and Remedial Exercises. General View of the Practice and Principles of Teaching. Laboratory course in the Chemistry of Nutrition. Lectures on Vision and Hearing with Practice in making Preliminary Tests. Important Points in School Hygiene. The Influence of Physical and Mental Exercise on the Special Functions of Women. The Disorders of Children susceptible to Physical Treatment. Administration and Management of School, College, and Y. M. C. A. Gymnasiums and Athletic Associations.

##### *Practice.*

Methods and Practice in Teaching. Advanced Drills in Wands, Indian Clubs and Bar Bells. Advanced Work in Heavy Gymnastics and Athletics. The most approved forms of active and resistive exercises as applied in Medical Gymnastics. Assault Fencing, Advanced Dancing, Tumbling, and Posturing. Original Class Drills by Pupils with Wands, Dumb-bells, Indian Clubs, Free Exercises, etc. Practice in Teaching Heavy Gymnastics with instruction as to the best Methods of assisting Pupils. Practice in conducting Gymnastic Exhibitions, Athletic Meetings, Games, etc.

#### THE REQUIRED STUDIES AND EXERCISES.

##### First Year.

THEORY.	PRACTICE.
Anatomy.	Swedish Free Movements.
Physiology.	Military Marching.
Histology.	Wooden Dumb-Bells.
Personal Hygiene.	Swedish Stall Bars.

##### HEAVY GYMNASTICS.

<i>Men.</i>	<i>Women.</i>
Vaulting Bar.	Vaulting Bar.
Parallel Bars.	Balance Swing.

**Second Year.****THEORY.**

Applied Anatomy.  
 Anthropometry.  
 Physiology of Exercise.  
 Emergencies.

**PRACTICE.**

Free Exercises.  
 Short Wands.  
 Chest Weights.  
 Fencing.

History of Physical Education.

**HEAVY GYMNASTICS.***Men.*

Vaulting Horse.  
 Horizontal Bar.  
 Two Athletic Games.

*Women.*

Gymnasium Ladders.  
 Parallel Bars.  
 Two Gymnastic Games.

Track and Field Athletics.

**Third Year.****THEORY.**

Psychology.  
 Physical Examinations.  
 History of Education.  
 Philosophy of Exercise.

**PRACTICE.**

Indian Clubs.  
 Iron Dumb-bells.  
 Dancing Steps.  
 Field Athletics.

Organization, etc.

**HEAVY GYMNASTICS.***Men.*

Horizontal Bar.  
 Two Antagonistic Exercises.

*Women.*

Suspended Rings.  
 Swedish Boom.

Tumbling and Mat-Exercises.

**Fourth Year.****THEORY.**

Physical Diagnosis.  
 Experimental Research.  
 Practice and Principles of Teaching.  
 Administration.

**PRACTICE.**

Bar Bells.  
 Indian Clubs.  
 Aesthetic Dancing.  
 Corrective Gymnastics.

*Men.*

Track and Field Athletics.  
 Two Athletic Games.  
 Two Gymnastic Games.  
 Rowing and Swimming.

*Women.*



The above list of required studies and exercises need not necessarily be taken or finished in the years to which they are assigned.

The general subjects in which examinations are held are as follows, with the number of points of credit towards a total of 400 which will be allotted to each : —

### SUMMARY OF COURSES.

*Giving total number of Credit Points allowed for each group of Studies and Exercises.*

#### SUBJECTS IN THEORY.\*

1. Preparatory Studies . . . . .	25
2. Fundamental Studies . . . . .	70
3. Hygiene . . . . .	40
4. Physical Examinations . . . . .	55
5. Kinesiology . . . . .	50
6. Mechanotherapy . . . . .	60
7. Philosophy of Exercise . . . . .	20
8. Theory of Athletic Training . . . . .	25
9. Emergencies and First Aid . . . . .	15
10. Pedagogics . . . . .	50
11. Experimental Research . . . . .	50
12. Environment . . . . .	20
13. Organization, etc. . . . .	20
Total number of points for Theory . . . . .	500

#### WORK IN PRACTICE.\*

14. Calisthenics . . . . .	60
15. Light Gymnastics . . . . .	60
16. Swedish Gymnastics . . . . .	60
17. Gymnastic Games . . . . .	36
18. Heavy Gymnastics . . . . .	70
19. Athletic Games . . . . .	58
20. Track and Field Sports . . . . .	60
21. Antagonistic Exercises . . . . .	40
22. Developing Appliances . . . . .	20
23. Individual Accomplishments . . . . .	36
Total number of points for Practice . . . . .	500
24. Personal Qualifications . . . . .	200
Total number of points . . . . .	1200

\* For descriptions of these courses, see the "Special Circular" mentioned on page 125.

## ESSENTIALS OF A TECHNICAL EDUCATION IN PHYSICAL TRAINING.

It would hardly seem necessary to state that the pupils in Physical Training are not expected to become profound students in all of the subjects set forth in the four-year Summer School schedule, nor are they expected to qualify themselves to teach Anatomy, Physiology, Psychology, Physics, Chemistry, etc., in the brief time allotted to these studies.

It is absolutely necessary, however, that these technical pupils have some knowledge of some parts of such fundamental subjects, in order properly to qualify themselves to understand and to teach Physical Training in its broadest acceptance. It is also necessary that they should know something of the rudiments of correlated subjects, in order that they may be able to adapt their work to other departments of Education.

### GRADED COURSES.

The object of introducing Graded Courses into the Summer School work is to enable students and instructors, who are engaged in teaching throughout the year, to enter upon a thorough and systematic study of Physical Training, which can be carried on consecutively from one summer season to another until they cover ground enough to entitle them to a first-class certificate.

This method meets the objections so often brought against summer schools, "that they are necessarily superficial," and enables the student by lessening the number of his subjects, and extending the time devoted to them, to make thorough work of his course, while he is constantly supplementing it by his experience in teaching.

### SPECIAL COURSE FOR MEN.

The purpose of this course is to train teachers of practical gymnastics in colleges, preparatory schools, Young Men's Christian Associations, and athletic clubs. This course has been given since 1898 as a two-year course. This year it is re-arranged to correspond with the regular four-year programme of the School.

The instruction of the first year will include drills in chest weights, wooden and iron dumb-bells; four series of progressive elementary exercises on low and high horizontal bars, parallel and suspended

parallel bars, horse, buck, rings and mat; also three gymnastic games.

The second year's instruction will consist of drills in wands, wooden dumb-bells and Indian clubs; three series of intermediate exercises on the same eight pieces of apparatus as the first year; and three gymnastic games.

The third year will include drills in wooden and iron dumb-bells, and chest weights; three more intermediate series on the apparatus; and three gymnastic games.

In the course for the fourth year will be drills in wands, Indian clubs and short bar bells; two series of advanced exercises on the apparatus; and three gymnastic games.

This course has been used successfully in a number of colleges, preparatory schools, Young Men's Christian Associations, and athletic clubs for several years; it is particularly recommended to those who teach classes of young men and boys.

#### PARALLEL COURSES FOR MEN AND WOMEN.

Although many of the courses may be taken in common by men and women, it has been deemed advisable to limit the heavier forms of gymnastics, athletics, and antagonistic exercises to men, while the lighter calisthenics, Delsarte exercises, elementary apparatus work and aesthetic dancing are adapted and confined largely to women.

Where men are expected to instruct women, and women are called upon to teach men and boys, as is the case in many of the State Normal Schools, a judicious selection from both programmes will be allowed in order to meet the requirements of the teacher's position.

#### REQUIREMENTS.

Candidates for full certificates will be required to attend at least two full sessions in Theory and Practice and pass examinations in a sufficient number of subjects in the same to receive a total credit of 400 points.

A certain number of points are allotted to each subject. Any pupil doing excellent work will receive the highest mark allotted to that subject. A person doing very good work will receive the next lower mark. A pupil doing good work will receive the next lower,

while a pupil who does only fair or passable work will receive the lowest mark given for that subject.

Excellent or finished work is not expected of Summer School pupils, unless they have had much previous instruction or experience in teaching the subject.

In this case due credit will be given, whether the instruction has been given at the Harvard Summer School or elsewhere.

#### CERTIFICATES.

All students desiring to receive full certificates from the University will be required to complete four full Summer Courses, or to pass examinations in the Theory and Practice of the first, second, and third-year courses before being admitted to the fourth-year course.

Students who have taken the full Summer Course at Harvard in any previous year, or students who have spent one or more years at any other Normal School of Physical Training in good standing, will be admitted without examination to the second, third, or fourth-year course according to the amount of work they have done, and the subjects they are qualified to pursue.

Students wishing to receive credit for work done at other schools will be expected to present their certificates, with statements of the amount and character of work accomplished, at the commencement of the course, or to pass examinations on those subjects in which they wish to pursue advanced courses.

Entrance examinations for the different courses will be held at the Hemenway Gymnasium on the morning of July 1, beginning at 9 o'clock.

Final examinations will be held at the Gymnasium on the week following the close of the regular five weeks' course.

Pupils who have attended previous Summer School courses at Harvard, but who have not received full certificates, are entitled to have their present standing adjusted in accordance with the new system of credits.

#### CREDIT POINTS.

In making up the total of 400 credit points, the minimum requirement for a full certificate, the pupil is advised that he will be expected to make at least 100 points in Theory, 100 points in Prac-

tice, and 50 points in Personal Qualifications. The remaining 150 points may be made up in any one of the above groups of subjects or in all combined.

#### CERTIFICATES OF ATTENDANCE.

Special students who do not desire to take the examinations given at the end of each Summer's Course may be furnished with a certificate of attendance, if they have taken the full course for that year in Theory and Practice, and participated in all of the regular exercises.

#### PRACTICE AND THEORY COURSES.

Persons taking the Practice Course only, or the Theory Course only, in any single year, are not expected to teach and will not be entitled to a certificate. Those who have taken courses in Theory or Practice in any of the previous sessions of the Harvard Summer School and done satisfactory work in the same, may have these courses credited towards the eight courses required for a full certificate should they desire to qualify for one.

#### TERM AND FEES.

The instruction in Physical Education will begin Wednesday, July 1, and end Friday, August 7, 1908. Saturday forenoons will be utilized for instruction during the first five weeks. The examinations will begin Saturday, August 8, and end on Wednesday, August 12, 1908.

*Fees:* Full course, including Theory and Practice, each year, \$50; Theory, or Practice, each, \$25. (See pages 19-20.)

#### SPECIAL CIRCULAR AND APPLICATION BLANK.

A *Special Circular* containing further particulars, and application blank will be furnished on application to the Director, Dr. D. A. SARGENT, Cambridge, Mass. Applications should be returned by those intending to enter, with a statement of courses selected, before the first of July.



## SCHEDULE — THEORY AND PRACTICE

Hour	First Year	Second Year	Third Year	Fourth Year
9-10	Histology	Physiology	Physiology of Exercise History of Physical Education	Methods of Teaching Philosophy of Education
10-11	Anatomy	Applied Anatomy Anthropometry	Physical Diagnosis Construction & Equipment Nomenclature	Special Lectures Medical Gymnastics
2-3		First Aid Special Lectures	Massage Prescription	
11- 11.20	Fencing	Clubs Swedish	Games Figure Marching Marching Tactics	Marching Tactics Games
11.25- 11.45	Clubs	Fencing	Apparatus (men) " (women)	Apparatus (men) " (women)
11.50- 12.10	Calisthenics Marching Tactics	Fancy Steps Bounding Ball	Apparatus (men) Swedish	Military Drill Apparatus (men)
12.15- 12.35	Wands Dumb Bells	Wands Dumb Bells	Clubs Wands	Fencing
12.40- 1	Apparatus (men) Swedish (women)	Apparatus (men) " (women)	Fencing	Clubs Special
2.30	Dancing Foot Ball	Voice Training Foot Ball	Foot Ball	Dancing Foot Ball
3	Voice Training	Dancing	Dancing	
3.30	Athletics (women) Boxing, Wrestling (men)	Athletics (women) Boxing, Wrestling (men)	Athletics (women) Boxing, Wrestling (men)	Athletics (women) Boxing, Wrestling (men)
4.30	Hockey, Tennis (women) Track Athletics (men)	Hockey, Tennis (women) Track Athletics (men)	Hockey, Tennis (women) Track Athletics (men)	Hockey, Tennis (women) Track Athletics (men)

## PHYSICS.

WILLIAM EDWARD McELFRESH, Ph.D., *Professor of Physics in Williams College.*

PERCY WILLIAMS BRIDGMAN, A.M., *John Tyndall Scholar in Physics.*

HARVEY CORNELIUS HAYES, A.B., *Assistant in Physics.*

Two courses in Physics will be given in the Jefferson Physical Laboratory, beginning Wednesday, July 1, and ending Wednesday, August 12, 1908.

Fee for each course, \$30. (See pages 19-20.)

## S.B. COLLEGE ADMISSION REQUIREMENTS IN PHYSICS.

This course is intended primarily for teachers of Physics in secondary schools. It covers the experiments required for preparation in Physics for admission to Harvard College and contained in the pamphlet issued by the University called a Descriptive List of Elementary Exercises in Physics. These experiments have also been adopted in the report of the Committee of Ten, and by the Association of Colleges and Preparatory Schools of the Middle States and Maryland. The course is intended for teachers of the subject, and is conducted with special reference to their needs.

The course will consist of illustrated lectures (two each day), laboratory work (four hours each day), problems, and reading.

The laboratory work will consist of the following experiments in accordance with the above requirements:—

## MECHANICS AND HYDROSTATICS.

## EXER.

1. Weight of unit volume of a substance.
2. Lifting effect of water upon a body entirely immersed in it.
3. Specific gravity of a solid body that will sink in water.
4. Specific gravity of a block of wood by use of a sinker.
5. Weight of water displaced by a floating body.
6. Specific gravity by flotation method.
7. Specific gravity of a liquid, — two methods.
8. The straight lever, — first class.
9. Centre of gravity and weight of a lever.
10. Levers of the second and third classes.
11. Force exerted at the fulcrum of a lever.
12. Errors of a spring-balance.

13. Parallelogram of forces.
14. Friction between solid bodies (on a level).
15. Coefficient of friction (by sliding on incline).
16. Breaking-strength of a wire.
17. Comparison of wires in breaking tests.
18. Elasticity, — stretching.
19. Elasticity, — bending; effect of varying load.
20. Elasticity, — bending; effect of varying dimensions.
21. Elasticity, — twisting.
22. Specific gravity of a liquid by balancing columns.
23. Compressibility of air, — Boyle's law.
24. Density of air.
25. Four forces at right angles in one plane.
26. Comparison of masses by acceleration-test.
27. Action and reaction, — elastic collision.
28. Elastic collision continued; inelastic collision.

#### LIGHT.

29. Use of Rumford photometer.
30. Images in a plane mirror.
31. Images formed by a convex cylindrical mirror.
32. Images formed by a concave cylindrical mirror.
33. Index of refraction of glass.
34. Index of refraction of water.
35. Focal length of a converging lens.
36. Conjugate foci of a lens.
37. Shape and size of a real image formed by a lens.
38. Virtual image formed by a lens.

#### HEAT.

39. Testing a mercury thermometer.
40. Linear expansion of a solid.
41. Increase of pressure of a gas heated at constant volume.
42. Increase of volume of a gas heated at constant pressure.
43. Specific heat of a solid.
44. Latent heat of melting.
45. Determination of the dew-point.
46. Latent heat of vaporization.

#### SOUND.

47. Velocity of sound in open air.
48. Wave-length of sound.
49. Number of vibrations of a tuning-fork.

## ELECTRICITY AND MAGNETISM.

50. Lines of force near a bar magnet.
51. Study of a single-fluid galvanic cell.
52. Study of a two-fluid galvanic cell.
53. Lines of force about a galvanoscope.
54. Resistance of wires by substitution, — various lengths.
55. Resistance of wires by substitution, — cross-section and multiple arc.
56. Resistance by Wheatstone's bridge, — specific resistance of copper.
57. Temperature-coefficient of resistance in copper.
58. Battery resistance.
59. Putting together the parts of a telegraph key and sounder.
60. Putting together the parts of a small motor.
61. Putting together the parts of a small dynamo.

The laboratory hours will be from 9 A.M. to 12.30 P.M., and from 2 to 5 P.M., five days in the week. The laboratory will be open, for those desiring to work, from 8.30 A.M. to 1 P.M., and 2 to 5.30 P.M., and on Saturdays from 8.30 A.M. to 1 P.M.

The lectures will be given in Room 1, Jefferson Physical Laboratory, at 9 A.M. and 2 P.M.; the laboratory work will be done in Room 41.

The fee for this course is \$30. (See pages 19-20.)

The instruction in this course will be given by Professor W. E. McELFRESH and Mr. H. C. HAYES.

## SC. ADVANCED COURSE IN PHYSICS.

The object of the course is not only to give skill in physical manipulation, but also to enable the student to familiarize himself with physical phenomena by personal observation and accurate measurement. The course should properly be preceded by some elementary laboratory work, though it has been taken with profit by those not so trained who were familiar with the subject from text-book study.

The following partial list of the experiments will indicate the nature of the laboratory work: —

## MECHANICS.

Vernier gauge.  
 Micrometer gauge.  
 Spherometer.  
 Nicholson's hydrometer.  
 Specific gravity of a solid by Nicholson's hydrometer.  
 Reading by vibrations.  
 Sensitiveness of a balance.  
 Double weighing.  
 Weight in vacuo.  
 Density of a solid by submersion.  
 Capacity of a specific gravity bottle.  
 Density of a solid by the specific gravity bottle.  
 Force of gravity, by Bordas' pendulum.  
 Torsion pendulum: moment of torsion and moment of inertia.

## SOUND.

Pitch by the sonometer and by the siren.  
 Musical interval.  
 Velocity of sound in air by the resonance tube.  
 Velocity of sound in brass.  
 Organ pipes: overtones.  
 Helmholtz's analysis of sound.  
 Lissajous's Figures.  
 Chladni's Figures.

## HEAT.

Mechanical equivalent of heat.

## LIGHT.

The marine sextant; range finding.  
 Spectrometry; index of refraction.  
 Spectroscopy: flame, spark, vacuum tube, and absorption spectra.  
 Magnifying power of a telescope and opera glass.  
 Compound Microscope: equivalent focal length of object glass and eye piece.  
 Wave length of light by Newton's wings.  
 Wave length of light by the diffraction grating.  
 Rotation of the plane of polarization.  
 Photometry.



## MAGNETISM AND ELECTRICITY.

Magnetic lines of force.

$H$  by the magnetometer.

$H$  by the silver and by the gas voltameter.

Equipotential lines and lines of flow.

Wheatstone's bridge, wire and box form.

Battery resistance by the potentiometer.

Dip by the Earth inductor.

Resistance by heating.

Vacuum discharge phenomena, measurement of pressure

Dynamo.

Thermo-electricity.

The laboratory work will be accompanied by illustrated lectures and by problem work.

The lectures will be given in Room 25, Jefferson Physical Laboratory, at 9 A.M. and 2 P.M.; the laboratory work will be done in Room 41.

The laboratory hours will be from 9 A.M. to 12.30 P.M., and from 2 to 5 P.M., five days in the week. The laboratory will be open, for those desiring to work, from 8.30 A.M. to 1 P.M., and from 2 to 5.30 P.M., and on Saturdays from 8.30 A.M. to 1 P.M.

This course corresponds in part to Physics *C* of the Harvard Catalogue. It is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

The fee for this course is \$30. (See pages 19-20.)

For further information concerning this course address the Instructor, Mr. P. W. BRIDGMAN, 42 Conant Hall, Cambridge, Mass.

---

 PSYCHOLOGY. (See page 110.)
 

---

## PUBLIC SPEAKING, ORAL READING, VOICE TRAINING.

IRVAH LESTER WINTER, A.B., *Assistant Professor of Public Speaking.*

EDWARD MORGAN LEWIS, A.M., *Assistant Professor of Public Speaking and Oratory, Williams College.*

BERTEL GLIDDEN WILLARD, A.B., *Instructor in Public Speaking.*

WILLIAM HENRY NELSON, A.B., *Assistant.*

WILLIAM HAWLEY DAVIS, A.B., *Assistant.*

Four courses in Public Speaking are offered in 1908. The work will begin on Wednesday, July 1, and end on Wednesday, August 12, except in Course S4.

These courses are conducted according to the methods employed in Harvard University and in Radcliffe College. The purpose is to afford assistance to teachers of speaking and reading, to teachers of English literature or composition, to lawyers or ministers, or to others who use the voice in professional work. The instruction is planned primarily for giving personal training to the students. Through this, however, methods of teaching may be acquired. The courses are practical, requiring of each student daily oral exercises. An especial aim is simplicity and naturalness, and a preserving of individuality in the work of the student. The classes are small, allowing considerable attention to individuals. (See page 135.)

### S1. DEVELOPMENT OF THE VOICE.

This course is given mainly to vocal technique, and is intended to lay the foundation for more advanced work. It deals in a simple way with the physical conditions appertaining to correct voice production, and trains the vocal organs in right action for natural and effective speaking.

A system of vocal exercises is practised for acquiring control of breathing, free tone formation, easy variations of pitch, voice enlargement, and pure tone quality.

Selections of standard literature are used for applying the vocal principles to speaking and reading, and for practice in the simpler technique of expression: enunciation, inflection, phrasing, emphasis, modulation, expressive tone form and tone quality. Special attention is given to the correcting of individual vocal faults of the ordinary kind. Physical defects due to organic conditions cannot be corrected in class instruction.

The instruction in this course is given by Mr. WILLARD.

*The meetings of the course are from 11 A.M. to 12 M. daily except Saturday, in the New Lecture Hall.*

The fee for this course alone is \$20. If Course 2 or 3 is taken with it the fee is \$15 for each additional course. (See pages 19-20.)

### S2. PLATFORM READING.

This course is designed for aiding teachers to acquire facility in class-room discussion and class-room reading — especially teachers of English who regard expressive reading by teacher and pupils as

contributing materially to the results of literary instruction. The literature taken up is representative of the expository or critical essay, the narrative in prose and verse, lyric poetry, and the drama. Some of the texts used are among those of the College Entrance Requirements in English. Students preparing for reading in a more public way may choose other literature.

Instruction is given in the principles of vocal expression. Literature is analysed for purposes of interpretation, and representative passages are assigned to the class for daily vocal practice in the expression of meanings, moods, and sentiments. Personages in story and the drama are studied, and suggestive representations of character are discussed and illustrated.

The members of the class receive detailed instruction in voice and expression for giving from the platform prepared discussions and readings. Subjects for discussion are generally taken from the literature in hand, and readings are interspersed for illustrative purposes. A student who so prefers may practise wholly upon selected readings. Criticism is given by members of the class and by the instructor.

The instruction in this course is given by Professors WINTER and LEWIS.

*The meetings of the course are from 10 to 11 A.M., in Room 11, Sever Hall; at times in the New Lecture Hall.*

The fee for this course alone is \$20. If Course 1 or 3 is taken with it the fee is \$15 for each additional course. (See pages 19-20.)

### S3. PLATFORM SPEAKING.

The end in view in this course is facility and effectiveness in the expression of one's own thought on occasions more or less public. The work of each individual may be adapted to his particular needs. The members of this course have been largely ministers, lawyers, principals, and superintendents.

Instruction is given in voice, platform bearing and gesture, and matters connected with the speaker's personal relation to the audience. Selected speeches are studied with a view to the subject matter, the special occasion of the original delivery, and the character of the audience addressed, and typical parts are practised for working out appropriate variations in the manner of presentation. These

speeches are in the form of the expository address, of the argument or debate, and of the light or humorous discussion or narrative.

The members of the class practise daily in delivering speeches from the platform; at times the longer, more carefully prepared and more formal address; more frequently the shorter, more informal speech. These speeches may be selected or original, — the latter either prepared or extemporaneous, — according to the needs or the choice of each student. Usually one or two formal debates are held. Criticism is given by members of the class and by the instructor.

The instruction in this course is given by Professors WINTER and LEWIS.

*The meetings of the course are from 9 to 10 A.M., in the New Lecture Hall.*

The fee for this course alone is \$20. If Course 1 or 2 is taken with it the fee is \$15 for each additional course. (See pages 19–20.)

#### S4. ORAL READING OF ENGLISH CLASSICS.

A course of fifteen lectures and illustrative readings, given by Professor WINTER.

Course 4 is offered especially for teachers of English who are interested in oral reading as a means of interpretation, but who may not wish to do the practical work of the other courses. It is, however, closely related to the other courses in that it presents somewhat systematically the principles of oral expression. The aim is, by discussion and illustration, to give practical aid in reading. The course may be taken in addition to any of the other courses and may be taken in addition to any other course in the Summer School. *It is intended particularly for teachers of English and of other literatures.*

The subjects of the lectures and readings are as follows: —

1. July 6. Oral Interpretation as related to the teaching of English.
2. “ 8. Voice and Speech — Methods of Practice and Teaching.
3. “ 10. Tennyson’s *The Passing of Arthur*.
4. “ 13. Milton’s *L’Allegro* and *Il Penseroso*; Irving’s *Rip Van Winkle*.
5. “ 15. Carlyle — Selections; Longfellow — Selections.
6. “ 17. Dickens — Selections; Browning — Selections.

7. July 20. Webster — Selections ; Mark Twain — Selections.
8. “ 22. Lowell's The Vision of Sir Launfal. Discussion and reading.
9. “ 24. Shakspeare's Macbeth. Lecture.
10. “ 27. Macbeth. Reading.
11. “ 29. Macbeth. Reading.
12. “ 31. Shakspeare's As You Like It. Lecture.
13. Aug. 3. As You Like It. Reading.
14. “ 5. As You Like It. Reading.
15. “ 7. Poe's The Raven ; Longfellow's The Bridge, and Paul Revere's Ride ; Bryant's Thanatopsis ; prose selections.

*The meetings of this course will be on Mondays, Wednesdays, and Fridays, at 12 o'clock, in Room 11, Sever Hall.*

*The Certificate of the Summer School is not given for this course.*

The fee for this course will be \$7. If taken with any other course in the Summer School the fee will be \$5.

*A student who registers in this course only may not obtain the Auditor's privilege in other Summer courses.*

Students taking Course 2 or 3 are generally advised to take also Course 1, unless they have had some vocal training. Students taking Course 2 may attend Course 3 ; those taking Course 3 may attend Course 2, as auditors, and without charge.

The time required for work outside of class hours is generally two or three hours daily for one course, and an additional hour or two daily for a second course. Suggestions are given for reading beyond the requirements.

If the number of students in Courses 2 and 3 is very small, the two courses may be given as one, at 10 o'clock. Course 1 or 2 or 3 may, if large in the number of students, be given in two sections.

Occasional afternoon or evening lectures or readings are given, to which all members of the courses are invited.

Afternoon readings were given in 1907 by —

JOHN MILTON CHAMBERS, A.B., *Professor of Rhetoric and Oratory*, Franklin and Marshall College.

CHARLOTTE HASTINGS ADAMS, A.B. (*Student Assistant*), *Teacher of English*, The Gilman School for Girls.

CHESTER BRADSTREET STORY, A.B. (*Student Assistant*), *Teacher of English*, High School, Hyde Park.



Afternoon lecture, the Cultivation of the Voice, by —

BERTEL GLIDDEN WILLARD, A.B., *Instructor in Public Speaking.*

For information concerning these Courses or for a list of books to be used, address Professor I. L. WINTER, Hubbard Park, Cambridge, Mass.

**RAILROAD ENGINEERING.** (See page 59.)

**READING AND SPEAKING.** (See page 132.)

**REPRESENTATION.** (See page 76.)

**ROMAN HISTORY.** (See page 87.)

### ROMANCE LANGUAGES.

ALCÉE FORTIER, D.LT., *Professor of Romance Languages, Tulane University, New Orleans, La.*

CHARLES HENRY CONRAD WRIGHT, A.M., *Assistant Professor of French.*

ALPHONSE BRUN, A.M., *Instructor in French.*

GEORGE LUTHER LINCOLN, A.M., *Austin Teaching Fellow in Romance Languages.*

Five courses in Romance Languages are offered in 1908, beginning Wednesday, July 1, and ending Wednesday, August 12.

### FRENCH.

#### S1. INTERMEDIATE COURSE ON COLLEGE ADMISSION REQUIREMENTS FOR TEACHERS AND THOSE PREPARING TO TEACH FRENCH.

The course is suited to the needs of students who already possess a reading knowledge of the language, but need further teaching in translation, composition, and grammar. The instructor will cover rapidly but systematically for the benefit of teachers the entrance requirements in French and will indicate some of the methods of instruction in use in the College courses to which the admission examinations lead. Several rather difficult French texts will be read and discussed.

The books used will include the following: Grandgent, *Essentials of French Grammar* (Heath & Co.); Taine, *L'Ancien Régime*

(Heath & Co.); Michelet, *Selections* (Heath & Co.); Selections from *les Misérables* (Ginn & Co.); Musset, *Selections* (Ginn & Co.); Corneille, *Polyeucte*; Racine, *Athalie*; Molière, *Tartuffe*.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet for an hour and a half five times a week for six weeks at 9 A.M., in Sever A.*

The fee for this course is \$20. (See pages 19-20.)

For further information concerning this course, address the Instructor, Professor C. H. C. WRIGHT, 7 Buckingham Street, Cambridge, Mass.

#### FRENCH CONVERSATION AND COMPOSITION.

This course is intended for students who have a good reading knowledge of French and have had some practice in hearing it. The most important principles of French grammar essential to the practical use of the language will be reviewed with the help of copious examples, and the main differences between French and English construction and idiom will be abundantly illustrated. Students will have constant practice in translating typical sentences from English into French, in furnishing oral and written paraphrases and synopses, and in answering questions in French. The ear will be trained also by frequent dictation exercises. Attention will be paid to pronunciation. During the last two weeks the instructor will give informal lectures on the customs and institutions of contemporary France, and the members of the class will be asked to reproduce, in abridged form, and in French, the substance of these talks.

The course will be conducted in French.

*The class will meet for at least one hour five times a week for six weeks at 11 A.M., in Sever 23.*

The fee for the course is \$20, except that students who take this course in connection with either of the other two courses in French may take the two courses together for \$30. (See pages 19-20.)

For further information address the Instructor, Mr. ALPHONSE BRUN, 39 Ellery Street, Cambridge, Mass.

## FRENCH LITERATURE.

Seven Great Authors of the Nineteenth Century: Lamartine, Hugo, Musset, Vigny, Gautier, Mérimée, and Coppée. The work of the course will consist of rapid reading of some of the principal works of the above-named authors, accompanied by lectures in French on the authors and works read.

*Text-books.* — Fortier's *Sept Grands Auteurs du XIX<sup>e</sup> Siècle* (Heath & Co.); Canfield's *French Lyrics* (Holt & Co.); Lamartine's *Graziella*; Hugo's *Hernani* (Heath & Co.); Hugo's *Notre Dame de Paris* (Ginn & Co.); Hugo's *Ruy Blas*; Musset, *Trois Comédies: Fantasio, On ne bodine pas avec l'amour, Il faut qu'une porte soit ouverte ou fermée*; Gautier's *Jettatura*; Vigny's *Le Cachet Rouge, La Canne de Jonc*; Mérimée's *Chronique du Règne de Charles IX* (Heath & Co.).

This course is accepted as a half-course for a degree in Harvard University. (See pages 13–19.)

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Sever 23.*

The fee for the course is \$20. (See pages 19–20.)

For further information address the Instructor, Professor ALCÉE FORTIER, Tulane University, New Orleans, La. .

## SPANISH.

## S1. ELEMENTARY COURSE.

This course will begin on Wednesday, July 1, and end on Wednesday, August 12, 1908.

It is intended to meet the needs of beginners, but it may also be taken with profit by those who have already some knowledge of the elements of the language. The work will consist of a systematic drill in Spanish grammar, with exercises in composition, and of a considerable amount of translation from representative modern novelists and dramatists. The reading done will comprise both prepared and sight work.

While a knowledge of several languages is in no wise a prerequisite to the course, an effort will be made to apply the student's acquaintance with Latin, French, or Italian to the attainment of a readier power of translation from Spanish into English.

The chief books to be used are: Hills and Ford's *Spanish Grammar* (Heath & Co.); Ford's *Exercises in Spanish Composition* (Heath & Co.); P. A. de Alarcón, *El Capitán Veneno* (Heath & Co.); Bonilla's *Spanish Daily Life*; L. F. de Moratin, *El sí de las niñas* (Ginn & Co.); Valera, *Pepita Jiménez*; Taboada, *Cuentos* (Heath & Co.).

*The class will meet for an hour and a half five times a week for six weeks at 9 A.M., in Sever 19.*

The fee for the course is \$20. (See pages 19-20.)

For further information concerning this course, address the Instructor, Mr. G. L. LINCOLN, 44 Ware Hall, Cambridge, Mass.

## S2. ADVANCED COURSE.

The major part of the work done in this course will consist of the writing of exercises in composition of an advanced nature and the reading and interpretation of a number of the masterpieces of modern Spanish prose and poetry. These will be chosen particularly from the works of the nineteenth century, but to some degree also from those of the Golden Age (the sixteenth and seventeenth centuries). Through the medium of a few comprehensive lectures, an endeavor will be made to convey such an outline knowledge of the whole of Spanish literary history as may guide the student in future private reading.

Remy's *Spanish Composition* (Heath & Co.) will be used, and the texts to be read will be selected from the following list: Cervantes, *Don Quijote* (selected chapters); Lope de Vega, *La Estrella de Sevilla*; Calderón, *La vida es sueño*; L. F. de Moratin, *El café*; Alarcón, *El sombrero de tres picos*; Valera, *Pepita Jiménez*; García Gutierrez, *El Trovador*; Galdós, *Doña Perfecta*; Valdés, *José*; Tamayo y Baus, *Un drama nuevo*; Núñez de Arce, *El haz de leña*; Echegaray, *Ó locura ó santidad*; Pereda, *Pedro Sánchez*; Pardo Bazán, *La cuestión palpitante*; and the lyrics contained in *A Spanish Anthology* (Silver, Burdett & Co.).

Useful works of reference are: Ticknor, *History of Spanish Literature*; Fitzmaurice-Kelly, *A History of Spanish Literature* (cf. the Spanish translation of this book); Blanco-Garcia, *La literatura española en el siglo XIX*; Pineyro, *El Romanticismo en España*; Menéndez y Pelayo, *Las ideas estéticas* and the various prologues

in the volumes of his *Antología de poetas liricos castellanos*; Valera, *Florilegio de poesias castellanas del siglo XIX*, tome I, Madrid, 1902 (this contains a sketch of the history of Spanish poetry of the eighteenth and nineteenth centuries).

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 15.)

*The class will meet for an hour and a half five times a week for six weeks at 10.30 A.M., in Sever 19.*

The fee for the course is \$20. (See pages 19-20.)

For further information address the Instructor, Mr. G. L. LINCOLN, 44 Ware Hall, Cambridge, Mass.

---

**SHOPWORK.** (See page 62.)

**SURVEYING.** (See page 58.)

**THEORY OF DESIGN.** (See page 74.)

**TRIGONOMETRY.** (See page 99.)

**VOICE TRAINING.** (See page 132.)

---

The List of Students in the Summer Schools of Harvard University of 1907 (except the regular students registered in the Engineering Courses) is printed in the Harvard University Catalogue for 1907-08, pages 193-251.

This Catalogue is mailed gratis to teachers, and may be obtained by applying to

THE PUBLICATION OFFICE,

2 UNIVERSITY HALL,

CAMBRIDGE, MASS.



# THE SUMMER SCHOOLS.

1907.

---

## THE SUMMER SCHOOL OF THE FACULTY OF ARTS AND SCIENCES.

---

### ANTHROPOLOGY.

Breslin, John George, <i>Student</i> ,	Charlestown.
Broun, Irving Sterling, <i>Student</i> ,	New York, N.Y.
Brown, Percy Whiting, <i>Student</i> ,	Concord.
Buckman, Henry Holland, Jr., <i>Student</i> ,	Jacksonville, Fla.
Ch'ien, Fang Shih, <i>Student</i> ,	Mukden, China.
Condell, Clement Harlow, <i>Student</i> ,	Cambridge.
Dillingham, Norman Slade, <i>Student</i> ,	Chelsea.
Draper, Paul Augustus, <i>Student</i> ,	Canton.
Harrington, Arthur Minot, <i>Student</i> ,	Rockland.
Hill, Everett Melville, <i>Student</i> ,	Roxbury.
Inches, Charles Edward, Jr., <i>Student</i> ,	Medfield.
Janvrin, Charles Edwin, <i>Librarian, Jefferson Medi- cal College Library, Philadelphia, Pa.</i>	Hampton Falls, N.H.
Leavitt, Erasmus Darwin, <i>Student</i> ,	Somerville.
Northcott, Sidney Thomas Hill, <i>Student</i> ,	Quincy.
Pratt, Ezekiel, <i>Student</i> ,	Somerville.
Preston, Frank Loring, <i>Student</i> ,	Boston.
Rand, William McNear, <i>Student</i> ,	Cambridge.
Ricker, Charles Sherwood, <i>Student</i> ,	Cambridge.
Rist, Bess Vera, <i>Student</i> ,	Dawson, Pa.
Story, Oliver Ewell, <i>Student</i> ,	Cambridge.

### ARCHITECTURE.

#### HISTORY OF EARLY EUROPEAN ARCHITECTURE.

Bryant, Henry Stone, <i>Student</i> ,	Brookline.
Clark, Helen Augusta,	Boston.
Edson, Elie Charlier, <i>Student</i> ,	Cambridge.
Farrell, Louis Treanor, <i>Student</i> ,	Roxbury.

Houghton, James Tilley, <i>Student</i> ,	Saratoga Springs, N.Y.
Jensen, William Barton, LL.B. ( <i>Boston Y. M. C. A.</i> ),	
<i>Student</i> ,	E. Boston.
Kelly, Shaun, <i>Student</i> ,	Paris, France.
Langstaff, Bridgewater Meredith, <i>Student</i> ,	Brooklyn, N.Y.
Parker, George Alanson, <i>Student</i> ,	So. Lancaster.
Potter, Raymond Austin, <i>Student</i> ,	Brookline.
Pratt, Ezekiel, <i>Student</i> ,	Somerville.
Stone, Edward Mandell, <i>Student</i> ,	Hyde Park.
Ward, Katharine, <i>Student</i> ,	W. Somerville.
Wendt, Edmund Charles, <i>Student</i> ,	New York, N.Y.

#### HISTORY OF LATER EUROPEAN ARCHITECTURE.

Fulton, Emma Virginia Pearson, A.B. ( <i>Indiana Univ.</i> ), A.B. ( <i>Leland Stanford Jr. Univ.</i> ),	Indianapolis, Ind.
Goodale, Fairfield, <i>Student</i> ,	Cambridge.
Palmer, Alice Williams, <i>Charitable Work</i> ,	Boston.
Prescott, George Lincoln, <i>Student</i> ,	Concord.
Rodgers, James Donald Cameron, <i>Student</i> ,	Fort Meade, So. Dak.
Whitney, James Scollay, <i>Student</i> ,	Brookline.

#### ARCHITECTURAL DESIGN.

Frost, Henry Atherton, A.B. ( <i>Harvard Univ.</i> ),	
<i>Student</i> ,	Fitchburg.
Reed, Edward Goodwin, <i>Student</i> ,	Lexington.
Shurtleff, Harold Robert, A.B. ( <i>Harvard Univ.</i> ),	
<i>Student</i> ,	Concord, N.H.

#### ASTRONOMY.

Conklin, Jean, S.M. ( <i>New York Normal Coll.</i> ),	
<i>Instructor, Normal College</i> ,	New York, N.Y.
Macgillivray, Andrew, A.B. ( <i>St. Francis Xavier's Coll.</i> ), <i>Teacher, Academy, Antigonish, N.S.</i>	Harbor Road, N.S.
Rau, Gokarn Subba, A.B. ( <i>Madras Univ.</i> ), L.T. ( <i>ibid.</i> ), <i>Professor, Zamorin's College</i> ,	Calicut, So. India.

#### BOTANY.

##### ELEMENTARY.

Blake, Eleanor Mary, <i>Teacher, High School</i> ,	Portland, Me.
Bramhall, Thomas Long, A.B. ( <i>Harvard Univ.</i> ),	
<i>Teacher, Adams Academy, Quincy</i> ,	Roxbury.

Chu, Kung Chao, <i>Student</i> ,	Nanking, China.
Conant, Miriam Abbot, <i>Student</i> ,	Littleton.
Holmes, William King, A.B. ( <i>Bates Coll.</i> ), <i>Teacher</i> ,	
<i>High School, New Britain, Conn.</i>	So. Paris, Me.
Sutton, Frederick Isler, <i>Student</i> ,	Kinston, N.C.
Wight, Edith Adeline, <i>Teacher, High School, Newton</i> ,	Waltham.

## FLOWERING PLANTS.

Armington, Sarah Randall, A.B. ( <i>Radcliffe Coll.</i> ),	
<i>Student</i> ,	Cambridge.
Connolly, Cornelius Joseph, A.B. ( <i>St. Francis</i>	
<i>Xavier's Coll.</i> ), <i>Student</i> ,	Lourdes, N.S.
Cox, Lester Everett, M.D. ( <i>Univ. of Pennsylvania</i> ),	
<i>Student</i> ,	Portland, Me.
Hayward, Thalia Stewart, <i>Assistant, Hollins Insti-</i>	
<i>tute</i> ,	Hollins, Va.
Howe, Caroline Gore, A.B. ( <i>Boston Univ.</i> ), <i>Teacher</i> ,	
<i>High School</i> ,	Gloucester.
Leavitt, Mrs. Robert Greenleaf, A.B. ( <i>Radcliffe</i>	
<i>Coll.</i> ),	Stoughton.
Salgueiro, Manuel Alberto, <i>Student</i> ,	Cambridge.
Spargo, Caroline, <i>Teacher, Washington School</i> ,	Wheeling, W.Va.

## CHEMISTRY.

## ELEMENTARY CHEMISTRY.

Abell, Adelaide May, S.B. ( <i>Wellesley Coll.</i> ), <i>Teacher</i> ,	
<i>Northfield Seminary, E. Northfield</i> ,	Allston.
Chu, Ting Chi, <i>Student</i> ,	Shanghai, China.
Fernald, Ethel, <i>Student</i> ,	Melrose.
Foss, Clara Sherwood, <i>Assistant, Westbrook Sem-</i>	
<i>inary, Portland, Me.</i>	Dover, Me.
Hall, Louise, A.B. ( <i>Vassar Coll.</i> ), <i>Teacher, Buffalo</i>	
<i>Seminary, Buffalo, N.Y.</i>	Lowell.
Hatch, Fanny Clark, <i>Teacher, Northfield Seminary</i> ,	
<i>E. Northfield</i> ,	Everett.
Jones, Ellis William, <i>Student</i> ,	Boston.
Lees, Annie Edith, <i>Teacher, Bowditch School</i> ,	
<i>Jamaica Plain</i> ,	Wellesley Hills.
McGregor, Charles Malcolm, S.B. ( <i>Union Coll.</i> ),	
<i>Vice-Principal, Owego, N.Y.</i>	Gloversville, N.Y.
Morse, Amy Prescott, A.B. ( <i>Mt. Holyoke Coll.</i> ),	
<i>Teacher</i> ,	Lexington.

- Morton, Harriet Ena, A.B. (*Acadia Coll.*), A.M.  
*(ibid.)*, Teacher, Chicopee High School, Springfield.  
 Scott, Norman McLean, Student, Melrose Highlands.  
 Shên, Kuan Yuan, Student, Canton, China.  
 Stone, James Kent, A.B. (*Harvard Univ.*), Student, Brookline.  
 White, Edward, Mining, Chihuahua, Mexico.

## ORGANIC CHEMISTRY.

- Binmore, Elizabeth, A.B. (*McGill Univ.*), A.M.  
*(ibid.)*, Instructor, Commercial and Technical High School, Montreal, Can. Westmount, P.Q., Can.  
 Bosworth, Alfred Willson, S.B. (*R. I. Coll. of A. & M. Arts*), Assistant Chemist, New York Agricultural Experiment Station, Geneva, N.Y.  
 Carter, George Revilo, Student, Watertown, N.Y.  
 Collner, William Harrison, Student, St. Petersburg, Pa.  
 Horan, David Sander, Assistant Chemist, Charles Hansen's Laboratory, Little Falls, N.Y.  
 Linn, Tse-Sheng, Student, Hong-Kong, China.  
 Mullenix, Rollin Clarke, A.B. (*Wheaton Coll.*), A.M.  
*(ibid.)*, Student, Cambridge.  
 Stanislaus, I. V. Stanley, S.B. (*Univ. of Illinois*),  
 Instructor, Medico-Chirurgical College, Philadelphia, Pa. Lansdowne, Pa.  
 Tileston, Wilder, A.B. (*Harvard Univ.*), Physician, Boston.  
 Vail, James Garrett, Business, Media, Pa.

## QUANTITATIVE ANALYSIS.

- Crosby, Harriet Frances, A.B. (*Wellesley Coll.*),  
 Instructor, English and Classical High Schools, Lynn.  
 Horan, David Sander, Assistant Chemist, Charles Hansen's Laboratory, Little Falls, N.Y.  
 Hoyt, Samuel Walter, S.B. (*Amherst Coll.*), Teacher, Fitchburg.  
 High School,  
 Quick, Oscar, A.B. (*Harvard Univ.*), A.M. (*ibid.*),  
 Teacher, High Schools, New York, N.Y.  
 Ruggli, Eva Marguerite, A.B. (*Radcliffe Coll.*),  
 Teacher, High School, Foxboro, Cambridge.  
 Willmarth, Amos Bush, A.M. (*Harvard Univ.*),  
 Principal, High School, Bennington, Vt. Middlebury, Vt.

## CHEMICAL RESEARCH.

Bell, Richard Dana, <i>Student</i> ,	Somerville.
Butterfield, Alice Dacre, A.B. ( <i>Smith Coll.</i> ), <i>Teacher</i> , <i>Bradford Academy, Bradford</i> ,	Brattleboro, Vt.
Flint, Harley A, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Student</i> ,	Malden.

## EDUCATION.

## PRINCIPLES OF EDUCATION.

Cummings, John Joseph, A.B. ( <i>Boston Coll.</i> ), <i>Assistant, Marshall School, Boston</i> ,	Brighton.
Downey, Walter Francis, A.B. ( <i>Amherst Coll.</i> ), <i>Principal, High School, Albion, N. Y.</i>	No. Brookfield.
Fay, Alfred Chase, A.B. ( <i>Harvard Univ.</i> ), <i>Principal, High School</i> ,	Bridgewater.
Fuller, Constance, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher</i> , <i>Misses Allen's School, W. Newton</i> ,	Exeter, N.H.
Goodspeed, David Hussey, <i>Principal, Stone School</i> , <i>Walpole</i> ,	Santuit.
Howe, Charles Herbert, A.B. ( <i>Dartmouth Coll.</i> ), <i>Principal, High School</i> ,	Wakefield.
Kelley, James Herbert, S.B. ( <i>Cornell Coll.</i> ), <i>President, Oklahoma University Preparatory School</i> ,	Tonkawa, Okla.
Lo, Pan Hui, <i>Student</i> ,	Canton, China.
Marle, Ernest Robert, S.B. ( <i>London, England</i> ), A.R.C.S. ( <i>ibid.</i> ), <i>Teacher</i> ,	Birmingham, England.
Meredith, Arthur John, PH.B. ( <i>Wesleyan Univ.</i> ), <i>Teacher, Head of Commercial Department</i> , <i>High School</i> ,	Atlantic City, N.J.
Minnick, John Dufton, A.M. ( <i>George Washington Univ.</i> ), <i>Teacher, High School of Commerce</i> ,	New York, N.Y.
Ogburn, William Fielding, S.B. ( <i>Mercer Univ.</i> ), <i>Assistant Principal, Darlington School</i> ,	Rome, Ga.
Post, Martin Mercillian, A.B. ( <i>Hamilton Coll.</i> ), A.B. ( <i>Harvard Univ.</i> ), <i>Teacher, Yeatman High School, St. Louis, Mo.</i>	Clinton, N.Y.
Speece, May Weber, <i>Teacher, Pittsburg High School</i> ,	Pittsburg, Pa.
Tressler, Samuel Martin, <i>Supervising Principal</i> ,	Washington, N.J.
Whitney, Fairfield, A.B. ( <i>Bates Coll.</i> ), <i>Superintendent of Schools</i> ,	Townsend.



- Williams, Charles Adams, A.B. (*Williams Coll.*),  
A.M. (*Harvard Univ.*), *Principal, High School*, Hudson.  
Winter, Alfred Robinson, PH.B. (*Brown Univ.*),  
*Principal, Washington Grammar School*, Medford.

## EDUCATIONAL PSYCHOLOGY.

- Armistead, Mary Eldridge, *Teacher, Public Schools*, Memphis, Tenn.  
Beal, Edwin Irving, *Sub-Master, George Street School, Boston*, Quincy.  
Given, Mary Ella, *Teacher, Principal, Chevy Chase School*, Washington, D.C.  
Harrington, Arthur Minot, *Student*, Rockland.  
Kelley, James Herbert, S.B. (*Cornell Coll.*), *President, Oklahoma University Preparatory School*, Tonkawa, Okla.  
King, Ethel, A.B. (*Wellesley Coll.*), Cambridge.  
McKnight Nancy Jacobs, A.B. (*Wellesley Coll.*),  
A.M. (*George Washington Univ.*), *Teacher*, Washington, D.C.  
McNally, Lulu, *Assistant Director, Primary Instruction, Public Schools*, Washington, D.C.  
Riley, Katharine Josephine, *Teacher, Public Schools*, Randolph.  
Rogan, Eleanor, *Teacher, Evening High School*, Charlestown.  
Sisk, Robert Johnston, A.B. (*Dartmouth Coll.*),  
*Superintendent of Schools, Principal, Edward Little High School, Auburn, Me.* Dover, N.H.  
Whitney, Fairfield, A.B. (*Bates Coll.*), *Superintendent of Schools*, Townsend.

## SCHOOLS AND SCHOOL SYSTEMS.

- Aurner, Clarence Roy, PH.B. (*Univ. of Iowa*), *Superintendent of Schools*, Tipton, Ia.  
Beachler, John Reuben, A.B. (*Earlham Coll.*), *Superintendent of Schools*, Piqua, O.  
Berry, William Milton, A.B. (*Lincoln Univ.*), *Dinwiddie School of Agriculture, Dinwiddie, Va.* Conowingo, Md.  
Colleton, Eleanor Macaulay, *Teacher, Paul Revere School, Boston*, Roxbury.  
Curran, Edward Lawrence, *Principal, Suffolk School for Boys, Rainsford Island, Boston*, E. Bridgewater.  
Damon, Edwin Alfred, *Principal, W. Concord School, Concord Junction*, Quincy.  
Fay, Alfred Chase, A.B. (*Harvard Univ.*), *Principal, High School*, Bridgewater.

Field, Wilbur Stanwood, <i>Sub-Master, Minot School,</i> <i>Boston,</i>	Dorchester.
Hayward, Juliette Rathbone, <i>Master's Assistant,</i> <i>Gaston School, So. Boston,</i>	Malden.
Head, Walter Dutton, A.B. ( <i>Harvard Univ.</i> ), <i>Instructor,</i> <i>Phillips Exeter Academy,</i>	W. Somerville.
Hill, Clarence Byron, A.B. ( <i>Boston Univ.</i> ), <i>Instructor,</i> <i>Vermont Academy, Saxton's River, Vt.</i>	Waltham.
Kelley, Mary J., <i>Teacher, Normal School,</i>	Paterson, N.J.
Kingman, Caroline Melbourne, <i>Assistant, Gaston</i> <i>School, So. Boston,</i>	Boston.
Langworthy, Floyd Merton, A.B. ( <i>Hillsdale Coll.</i> ), <i>Superintendent, Public Schools,</i>	Burr Oak, Mich.
Leadbetter, Florence Eugénie, <i>Assistant, Roxbury</i> <i>High School, Boston,</i>	Roslindale.
Loring, Seth Arthur, A.B. ( <i>Tufts Coll.</i> ), <i>Principal,</i> <i>High School,</i>	Wilmington.
Mackin, John Clarence, PH.B. ( <i>Tufts Coll.</i> ), <i>Superintendent of</i> <i>Schools, Maynard, Stow, and</i> <i>Boxborough,</i>	Maynard.
Mitchell, Fred Carleton, S.M. ( <i>Univ. of Maine</i> ), <i>Principal, High School,</i>	Camden, Me.
Morse, William Russell, A.B. ( <i>Harvard Univ.</i> ), <i>Master, Public Latin School, Boston.</i>	Dorchester.
Noyes, Julian Leonard, <i>Principal, Phenix Grammar</i> <i>School, Warwick, R.I.</i>	Phenix, R.I.
Pennell, Charles Melvin, A.B. ( <i>Bowdoin Coll.</i> ), <i>Superintendent of Schools, Brunswick and</i> <i>Freeport, Me.</i>	Brunswick, Me.
Raub, Edgar Lovett, <i>Sub-Master, John A. Andrew</i> <i>School, Boston,</i>	Dorchester.
Sears, Seth, <i>Master, Franklin School, Boston,</i>	Cambridge.
Sewall, Frank Judson, PH.B. ( <i>Westminster Univ.</i> ), <i>Principal, Public Schools,</i>	New Wilmington, Pa.
Sweet-White, Emma Jean, <i>Teacher, Public School,</i> <i>No. 26,</i>	Brooklyn, N.Y.
Tibbits, Mary Kingsley, A.B. ( <i>Univ. of New Bruns-</i> <i>wick</i> ), <i>Assistant, High School, Boston,</i>	Jamaica Plain.
Tressler, Samuel Martin, <i>Supervising Principal,</i>	Washington, N.J.
Winter, Alfred Robinson, B.P. ( <i>Brown Univ.</i> ), <i>Principal, Washington Grammar School,</i>	Medford.
Wynne, Mary Eleanor, <i>Assistant, Girls' High</i> <i>School,</i>	Boston.

## ENGLISH.

## ENGLISH COMPOSITION A.

Atherton, Lily Bell, <i>Master's Assistant, Dearborn School, Boston,</i>	Medford.
Bargar, Margaret Elizabeth, s.B. ( <i>Buchtel Coll.</i> ), <i>Private Teacher,</i>	Uhrichsville, O.
Bayley, Anna Florence, <i>Assistant, Lewis Grammar School, Boston,</i>	Roxbury.
Bowser, Sadie Jane, <i>Cashier,</i>	Boston.
Cameron, Vivian, <i>Teacher, Miss Dana's School,</i>	Morristown, N.J.
Clawson, William Hall, PH.D. ( <i>Harvard Univ.</i> ), <i>Lecturer in English, University of Toronto,</i>	St. John, N.B., Can.
Coady, Emily Cornelia, <i>Teacher, Elementary Schools,</i>	New York, N.Y.
Cotter, Michael Alphonsus, A.B. ( <i>Van Buren Coll.</i> ), A.M. ( <i>ibid.</i> ), <i>Professor, Van Buren College,</i>	Van Buren, Me.
Dennis, Bernard Francis,	Niagara Falls, N.Y.
Ellis, Irene Harwood, O.D. ( <i>American School of Osteopathy</i> ), <i>Homekeeping,</i>	Brookline.
Eugenia, Sister, <i>Teacher, St. Joseph's Academy,</i>	St. Paul, Minn.
Fallon, James Joseph, <i>Student,</i>	Lawrence.
Finley, Cora Belle, <i>Teacher, Summer Hill School,</i>	Atlanta, Ga.
Foss, George Lathrop, <i>Reporter,</i>	Auburn, Me.
Gordon, Elizabeth Fulton, <i>Director of Physical Education, State Normal School,</i>	Bridgewater.
Grey, Anna, <i>Teacher, Grammar School,</i>	Elizabeth, N.J.
Hart, Susan Josephine, <i>Teacher,</i>	Wellesley.
Herlihy, Katharine Bernardine, <i>Teacher,</i>	Fitchburg.
Holtzelaw, William Henry, <i>Principal, Normal and Industrial Institute,</i>	Utica, Miss.
Kane, Mary Agnes, <i>Teacher, Grammar School, Westminster,</i>	Fitchburg.
Layne, Mary Eugenia, <i>Teacher,</i>	Lindale, Tex.
Luce, Mary Evelyn, <i>Home-keeper,</i>	Cambridge.
McCarthy, Christina Mary, <i>Teacher, Special Assistant, High School,</i>	So. Boston.
Marks, Jessie Dutton, <i>Teacher, Miss Porter's School,</i>	Springfield.
Meyers, Elizabeth Mary, <i>Teacher, Public School,</i>	Detroit, Mich.
Moore, Samuel, A.B. ( <i>Princeton Univ.</i> ), <i>Instructor, University of Kansas, Lawrence, Kan.</i>	Trenton, N.J.
Morse, Nathan Chase, <i>Student,</i>	W. Roxbury.

Mulvey, Mary Cecelia, <i>Teacher, Public School,</i>	Detroit, Mich.
Phillips, William Wellington, LL.B. ( <i>Univ. of Washington</i> ), <i>Ethnology,</i>	Seattle, Wash.
Pride, Christine Elizabeth, <i>Teacher, High School,</i>	Verona, N.Y.
Rogers, Bertha May, <i>Teacher, Hopedale,</i>	Somerville.
Schmucker, Katharine Muhlenberg, A.B. ( <i>Western Coll.</i> ), <i>Teacher, Girls' High School,</i>	Reading, Pa.
Stebbins, Ida Isabel, <i>Teacher, Grammar School,</i>	Brooklyn, N.Y.
Stolze, John Conrad, <i>Mining,</i>	Wheeling, W. Va.
Sullivan, Katharine Teresa, <i>Teacher, Grammar Schools,</i>	Haverhill.
Tucker, Lily Frances, A.B. ( <i>Boston Univ.</i> ), <i>Teacher, High School, Quincy,</i>	Arlington.
Vining, Fannie Louise, <i>Principal, Rollins School,</i>	Kansas City, Mo.
Wallace, Joseph Ambrose, A.B. ( <i>Dartmouth Coll.</i> ), <i>Instructor, Crosby High School, Waterbury, Conn.</i>	Medway.
Westfall, Pearl Dutchess, <i>Teacher,</i>	Spencer, Ind.
Wilson, Zillah Estella, <i>Grammar Critic, Northern Normal and Industrial School,</i>	Aberdeen, So. Dak.

#### ENGLISH COMPOSITION B.

Alexander, Florence Margaret, <i>Student,</i>	Newtonville.
Blanche, Sister Mary, <i>Teacher, Winona Seminary,</i>	Winona, Minn.
Breitenbach, Louise M., PH.B. ( <i>Univ. of Michigan</i> ), <i>Teacher, Home and Day School,</i>	Detroit, Mich.
Dickinson, Alice Emeline, <i>Teacher, State Normal School,</i>	Bridgewater.
Edwards, William James, <i>Principal, Normal and Industrial Institute,</i>	Snow Hill, Ala.
Gibbs, Laura Russell, B.L.S. ( <i>Univ. of Illinois</i> ), <i>Assistant, Radcliffe College Library,</i>	Cambridge.
Gruss, Pauline Froelich, <i>Teacher,</i>	Baltimore, Md.
Hayes, George Lewis, A.B. ( <i>Colgate Univ.</i> ), <i>Assistant Principal, Public School,</i>	Indianapolis, Ind.
Joseph, Sister Mary, <i>Teacher,</i>	Sinsinawa, Wis.
Kaufman, Joseph Paul, <i>Student,</i>	Norwich, Conn.
Kellner, Elisabeth Willard, <i>Author,</i>	Cambridge.
Maerker, Grace Elfrieda, A.B. ( <i>Ohio State Univ.</i> ), <i>Teacher, High School,</i>	Napoleon, O.
Orr, Marie Hester, <i>Teacher,</i>	Pittsburg, Pa.
Papazian, Bertha Sullivan,	Cambridge.

Reed, Warren Whittemore, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Boston.
Richardson, Caroline Francis, A.M. ( <i>Tulane Univ.</i> ), <i>Instructor, Newcomb College</i> ,	New Orleans, La.
Roche, Sarah Lucy, <i>Teacher</i> ,	Baltimore, Md.
Switzer, Lee Roy, A.B. ( <i>Ohio Northern Univ.</i> ), <i>Assistant Principal, High School, Ada, O.</i>	Cambridge.
Treffinger, Jane, <i>Teacher, Public Schools</i> ,	Pittsburg, Pa.
Welch, George Cogswell, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Stoughton.
Williamson, Edith Elvira, <i>Assistant Principal</i> , <i>Larimer School</i> ,	Pittsburg, Pa.
Yeh, Ta Ch'ien, <i>Student</i> ,	Kiangsu, China.

## ENGLISH COMPOSITION C.

Blake, Winifred Ballard, <i>Student</i> ,	Brookline.
Clementine, Sister Mary, <i>Teacher</i> ,	Sinsinawa, Wis.
Daly, Emma Elizabeth Dorothy, A.B. ( <i>Normal Coll.</i> , <i>New York City</i> ), <i>Teacher, Public Schools</i> ,	New York, N.Y.
DeVeny, Mary Elise, L.B. ( <i>Univ. of Michigan</i> ), <i>Critic Teacher, Normal School</i> ,	Chicago, Ill.
Lütkenhaus, Anna May, A.B. ( <i>Normal Coll.</i> , <i>New</i> <i>York City</i> ), <i>Teacher, Public Schools</i> ,	New York, N.Y.
Murphy, Elizabeth Henrietta, <i>Teacher, Lyons, N. Y.</i>	Gage, N.Y.
Neff, Elizabeth Hyer, <i>Student</i> ,	Cleveland, O.
Rich, Frank Merritt, <i>Principal, Athens Grammar</i> <i>School</i> ,	No. Weymouth.
Shirley, Minerva Blodgett, PH.B. ( <i>Boston Univ.</i> ), <i>Teacher, Hitchcock Academy</i> ,	Andover, N. H.
Weare, John, A.B. ( <i>Harvard Univ.</i> ), <i>Lecteur ang-</i> <i>lais à l'université de Lyon</i> ,	Cambridge.

## ARGUMENTATION.

Barkley, Mary Wager, A.B. ( <i>Univ. of Kansas</i> ), <i>Teacher, High School</i> ,	Topeka, Kan.
Forsyth, Louise, <i>Instructor, Buchtel College</i> ,	Akron, O.
Reynolds, Alice Southworth, <i>Teacher, Corry High</i> <i>School</i> ,	Augusta, Me.
Russell, Marie Louise, A.B. ( <i>Univ. of Tennessee</i> ), <i>Assistant, College Office</i> ,	Cambridge.



## ENGLISH ADMISSION REQUIREMENTS.

Barnitz, Wirt Whitcomb, <i>Student</i> ,	Hanover, Pa.
Bigelow, Clara Philena, <i>Teacher</i> ,	Cambridge.
Bowman, Jessie McMahon, <i>Teacher of English, Public School</i> ,	New York, N.Y.
Brawley, Margaret Cecilia, <i>Assistant, Girls' High School</i> ,	Roxbury.
Brotchie, Everett Andrew, <i>Student</i> ,	Stony Brook.
Catren, Ida M., <i>Teacher, Washington Irving High School</i> ,	New York, N.Y.
Colbert, Ada Rebecca, A.B. ( <i>West Virginia Univ.</i> ), <i>Teacher, Marshall College, State Normal School, Huntington, W. Va.</i>	Morgantown, W. Va.
Connelly, Mary Ann, S.B. ( <i>George Washington Univ.</i> ) <i>Teacher, Public Schools</i> ,	Washington, D.C.
Corbett, Anna Marie, PH.B. ( <i>Univ. of Chicago</i> ), <i>Teacher, High School, Akron, O.</i>	Barberton, O.
Eaton, Mary Newell, A.B. ( <i>Univ. of Michigan</i> ), <i>Teacher, High School</i> ,	Grand Rapids, Mich.
Farmer, James William, A.B. ( <i>Emory Coll.</i> ), <i>Principal, Louisville Academy</i> ,	Louisville, Ga.
Foote, Edmund Willard, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher</i> ,	Brooklyn, N.Y.
Garbison, Fred D., A.B. ( <i>Ohio Wesleyan</i> ), <i>Teacher</i> ,	Mt. Gilead, O.
Gernon, Mary Kathleen, A.B. ( <i>Kansas Univ.</i> ), <i>Teacher, High School, Topeka, Kan.</i>	Russell, Kan.
Gilmour, Kate Elliott, <i>Head Assistant, Summer Avenue School, Newark, N.J.</i>	Arlington, N.J.
Gross, Paul Ernst, A.M. ( <i>Yale Univ.</i> ), <i>Teacher, Moravian Parochial School</i> ,	Bethlehem, Pa.
Hildreth, Margaret Bradford, A.M. ( <i>New York University</i> ), <i>Teacher, McKinley Manual Training School</i> ,	Washington, D.C.
Hooper, Lilian, <i>Teacher, Chicago Latin School</i> ,	Allston.
Jones, Mercy Elizabeth, <i>Teacher</i> ,	Boston.
Kelley, Mary J., <i>Teacher, Normal School</i> ,	Paterson, N.J.
LaDame, Mary, A.B. ( <i>Brown Univ.</i> ), <i>Teacher, High School, Berlin, N.H.</i>	No. Adams.
Leadbetter, Dora, <i>Teacher, Shepard School</i> ,	Cambridge.
Lyster, Elizabeth Smith, <i>Teacher</i> ,	Lansdowne, Pa.
McAllister, Florence Lillian, A.B. ( <i>Tufts Coll.</i> ), <i>Teacher, Black River Academy, Ludlow, Vt.</i>	W. Somerville.
Maag, Katharine E., A.B. ( <i>St. Lawrence Univ., Canton, N. Y.</i> ), <i>Teacher, Preparatory School</i> ,	Baltimore, Md.

- Neal, Nellie Nevada, PH.B. (*Grove City Coll.*),  
Teacher, High School, Sewickley, Pa.
- Osgood, Stella Morris, A.B. (*Wellesley Coll.*), Prin-  
cipal, High School, Littleton, N. H. Pittsfield, N.H.
- Perine, Jane, Teacher, Cambridge.
- Pittis, Mary Olive, S.B. (*Valparaiso Univ.*), Teacher,  
South High School, Cleveland, O.
- Roberts, Sarah Atlant, A.B. (*Colby Univ.*), Assis-  
tant, High School, Caribou, Me.
- Root, Eva Rosalie, A.B. (*Cornell Univ.*), Teacher,  
High School, New Rochelle, N. Y. Skaneateles, N.Y.
- Schwartz, Hattie, Student, Brooklyn, N.Y.
- Symonds, Sara Brooks, A.B. (*Bates Coll.*), Teacher,  
High School, Exeter, N.H.
- Thomas, Lula Ella, Teacher, Public Schools, Baltimore, Md.
- Thompson, Abby May, PH.B. (*Wesleyan Univ.*),  
Assistant, Charlestown High School, Boston. [Rico.
- Törres, Francisco López, Teacher, Normal School, Quebradillas, Porto
- Traynor, Grace Anne, Teacher, High School, Biddeford, Me.
- Woods, Mary Margaret, Teacher, Glenville State  
Normal School, Glenville, W. Va.
- Young, Mabel, A.B. (*Grove City Coll.*), Teacher,  
Grove City College, Grove City, Pa.

## ANGLO-SAXON.

- Freeman, Almira Stevens, A.B. (*Oberlin Coll.*),  
A.M. (*ibid.*), Teacher, High School, Everett.
- Gibson, Katharine Elvira, S.B. (*Valparaiso Univ.*),  
Teacher, St. Katharine's School, Bolivar, Tenn. Conneaut, O.
- Watkins, Thomas Webb, A.B. (*Harvard Univ.*),  
Principal, High School, Stratford, N.H. Milford.
- Whittemore, Jennie Mabel, A.B. (*Univ. of Michi-  
gan*), Teacher, Lake View High School,  
Chicago, Ill. Reading.

## SHAKSPERE.

- Barnes, Julia Gay, A.M. (*Richmond Coll.*), Student, Richmond, Va.
- Berry, Priscilla Melick, Housekeeping, Springfield.
- Eiermann, William Mark, Student, Providence, R.I.
- McNamara, Ellen Agnes, New York, N.Y.
- Pell, Edith Augusta, A.B. (*Wellesley Coll.*), Teacher,  
St. Katharine's School, Davenport, Iowa, Newark, N.J.

## EIGHTEENTH CENTURY LITERATURE.

- Loudon, Eva, A.B. (*Wellesley Coll.*), *Teacher*, Washington Irving High School, New York, N.Y.  
 Richardson, Caroline Francis, A.M. (*Tulane Univ.*), Instructor, Newcomb College, New Orleans, La.  
 Savage, Edith Evangeline, *Teacher*, Public Schools, Watertown, So. Dak.  
 Vining, Fanny Louise, *Principal*, Rollins School, Kansas City, Mo.

## NINETEENTH CENTURY LITERATURE.

- Atkinson, John Hampton, PH.B. (*Ohio Univ.*), A.M. (*Columbia Univ.*), *Head of Department of English*, Blair Academy, Blairstown, N.J.  
 Blanche, Sister Mary, *Teacher*, Winona Seminary, Winona, Minn.  
 Boogher, Elbert Willis, A.B. (*Washington and Lee Univ.*), A.M. (*ibid.*), *Adj. Professor of English*, Georgia School of Technology, Atlanta, Ga.  
 Breitenbach, Louise M., PH.B. (*Univ. of Michigan*), *Teacher*, Home and Day School, Detroit, Mich.  
 Clementine, Sister Mary, *Teacher*, Sinsinawa, Wis.  
 Crabbe, Rosetta Palmer, PH.B. (*Wooster Univ.*), *Teacher*, High School, Wooster, O.  
 Crabtree, Lizzie Florence, *Assistant Librarian*, New Britain Institute, New Britain, Conn.  
 Eaton, Annie Celinda, *Housekeeper*, Burlington, Vt.  
 Fritsche, Anne Constans, *Student*, Cambridge.  
 Garten, James Edwin, A.B. (*Indiana Univ.*), *Teacher*, High School, Washington, Ind.  
 Grimké, Angelina Weld, *Teacher*, Armstrong Manual Training School, Washington, D.C.  
 Henderson, Roxana, *Student*, Cambridge.  
 Joseph, Sister Mary, *Teacher*, Sinsinawa, Wis.  
 Kidder, Ellen Miner, *Special Teacher*, Kelley School, Cambridge.  
 Kirby, Mary Agnes Deborah, *Teacher*, Public Schools, Boston, Marlboro.  
 Marks, Jessie Dutton, *Teacher*, Miss Porter's School, Springfield.  
 O'Connell, Mary, *Teacher*, Bowditch School, Boston, Jamaica Plain.  
 Orr, Thaddeus Browne, *Principal*, Training School, Adairville, Ky.  
 Palmer, Helen Wallace, *Student*, Lewisburg, Tenn.  
 Peake, Ellen Frances Palmer, A.B. (*Univ. of New Brunswick*), *Teacher*, State Normal School, Haverford, Pa.  
 Oshkosh, Wis.

Peake, Marion Palmer, A.B. ( <i>Univ. of New Brunswick</i> ), <i>Teacher, State Normal School, Stevens Point, Wis.</i>	Oshkosh, Wis.
Phillips, William Wellington, LL.B. ( <i>Univ. of Washington</i> ), <i>Ethnology,</i>	Seattle, Wash.
Quinn, Thomas Charles, <i>Student,</i>	Salem.
Rich, Frank Merritt, <i>Principal, Athens Grammar School,</i>	No. Weymouth.
Root, Eva Rosalie, A.B. ( <i>Cornell Univ.</i> ), <i>Teacher, High School, New Rochelle, N. Y.</i>	Skaneateles, N.Y.
Ruggles, William Burroughs, <i>Teacher of Singing,</i>	Cambridge.
Schmucker, Katharine Muhlenberg, A.B. ( <i>Western Coll.</i> ), <i>Teacher, Girls' High School,</i>	Reading, Pa.
Shepardson, Florence Ethelyn, A.B. ( <i>Smith Coll.</i> ), <i>Teacher, Free Academy, Corning, N. Y.</i>	Athol.
Sullivan, Katharine Teresa, <i>Teacher, Grammar School,</i>	Haverhill.
Thomas, Lula Ella, <i>Teacher, Public Schools,</i>	Baltimore, Md.
Washburn, George Ellery, <i>Student,</i>	Lexington.
Weare, John, A.B. ( <i>Harvard Univ.</i> ), <i>Lecteur anglais à l'université de Lyon,</i>	Cambridge.
Whitman, John Pratt, <i>Superintendent, Boys' Clubs, South End House,</i>	Boston.
Youmans, Florence Zeta, <i>Teacher, National Cathedral School,</i>	Washington, D.C.

## FINE ARTS.

## ELEMENTS OF DRAWING AND PAINTING.

Adams, Elizabeth, <i>Teacher, Primary School,</i>	Brooklyn, N.Y.
Bowen, Bertha Louise, <i>Supervisor of Drawing,</i>	Findlay, O.
Clement, Matilda, <i>Teacher, District School, So. Lyndeboro, N. H.</i>	Baldwinville.
Downes, Frances Willard, <i>Student,</i>	Cambridge.
Fluck, Julia Elsie, <i>Teacher, Public Schools,</i>	Philadelphia, Pa.
Grozier, Richard, <i>Student,</i>	Boston.
Morris, Georgia, <i>Teacher, Public School,</i>	Atlantic City, N.J.
Strickland, Alta, <i>Teacher, Public School, Youngstown, O.</i>	Cattaraugus, N.Y.
White, Naomi Gertrude, <i>Teacher,</i>	Pittsburg, Pa.
York, Ralph Alton, <i>Student,</i>	Portland, Me.

## HISTORY OF ANCIENT ART.

- Anthony, Andrew Weeks, *Student*,  
 Bement, Edward Dennison, *Student*,  
 Bond, Hugh Lennox, *Student*,  
 Brooks, Winthrop Sprague, *Student*,  
 Bryant, Henry Stone, *Student*,  
 Burrage, Dwight Grafton, A.B. (*Amherst Coll.*),  
     A.M. (*ibid.*), *Instructor, Doane College*,  
 Edson, Élie Charlier, *Student*,  
 Farrell, Louis Treanor, *Student*,  
 Fiske, Archibald Falconer Cushman, *Student*,  
 Flint, Helen Currier, A.M. (*Mt. Holyoke Coll.*), *Associate Professor, Mt. Holyoke College*,  
 Fujioka, Shin-ichiro, *Student*,  
 Greenough, Alfred, *Student*,  
 Hooper, James Everett, *Student*,  
 Houghton, James Tilley, *Student*,  
 Howe, Lawrence, *Student*,  
 Huntress, Leonard, Jr., *Student*,  
 Jensen, William Barton, LL.B. (*Boston Y. M. C. A.*), *Student*,  
 Jones, Frank Cazenove, Jr., *Student*,  
 Jones, Wilkins, *Student*,  
 Kelly, Shaun, *Student*,  
 Kemble, Francis Walker, *Student*,  
 Langshaw, Walter Seymour, *Student*,  
 Lerner, Alexander, *Student*,  
 Lilienthal, Albert Max, *Student*,  
 Lynch, Carrie Vinia, A.B. (*Smith Coll.*), *Student*,  
 McVickar, Henry Lansing, *Student*,  
 Mayer, Juan Randolph, *Student*,  
 Parker, George Alanson, *Student*,  
 Potter, Raymond Austin, *Student*,  
 Rogers, Juliette Wallace, *Teacher, Ingleside School*,  
 Russell, Joseph Ballister, Jr., *Student*,  
 Seabury, Gerald Abbot, *Student*,  
 Stone, Edward Mandell, *Student*,  
 Tyler, John, *Student*,  
 Wagstaff, Samuel Jones, *Student*,  
 Beverly Farms.  
 Boston.  
 Baltimore, Md.  
 Milton.  
 Brookline.  
 Crete, Neb.  
 Cambridge.  
 Roxbury.  
 New York, N.Y.  
 So. Hadley.  
 Tokyo, Japan.  
 Brookline.  
 East Northfield.  
 Saratoga Springs, N.Y.  
 Boston.  
 Lowell.  
 E. Boston.  
 Wellesley.  
 St. Louis, Mo.  
 Cambridge.  
 Philadelphia, Pa.  
 Cambridge.  
 Ottawa, Ont.  
 New York, N.Y.  
 Boston.  
 Mamaroneck, N.Y.  
 Philadelphia, Pa.  
 So. Lancaster.  
 Brookline.  
 New Milford, Conn.  
 Cambridge.  
 St. Paul, Minn.  
 Hyde Park.  
 Cambridge.  
 Cambridge.



## FINE ARTS OF THE MIDDLE AGES.

Abbot, Gabrielle, <i>Teacher, Public Schools,</i>	Boston.
Bement, Edward Dennison, <i>Student,</i>	Boston.
Brock, Arthur, Jr., <i>Student,</i>	Philadelphia, Pa.
Comstock, George Madison, <i>Student,</i>	Moorhead, Minn.
Dana, Otis Holmes, <i>Student,</i>	Brookline.
Eldred, Mabel DeWitt, s.B. ( <i>Rhode Island Coll. of Agri. and Mechan. Arts</i> ), <i>Instructor, Rhode Island College of Agriculture and Mechanic Arts,</i>	Kingston, R.I.
Fiske, Archibald Falconer Cushman, <i>Student,</i>	New York, N.Y.
Fujioka, Shin-ichiro, <i>Student,</i>	Tokyo, Japan.
Golden, Henry, <i>Student,</i>	Taunton.
Inches, Charles Edward, Jr., <i>Student,</i>	Medfield.
Jones, Wilkins, <i>Student,</i>	St. Louis, Mo.
Leavitt, Erasmus Darwin, <i>Student,</i>	Somerville.
Lerner, Alexander, <i>Student,</i>	Ottawa, Ont.
Morse, Sadie May, <i>In Charge of Art Department of Model School, New Jersey State Normal,</i>	Lexington.
Northcott, Sidney Thomas Hill, <i>Student,</i>	Quincy.
Preston, Frank Loring, <i>Student,</i>	Boston.
Rist, Bess Vera, <i>Student,</i>	Dawson, Pa.
Robinson, Henry Ashton, <i>Student,</i>	Hingham.
Rogers, Juliette Wallace, <i>Teacher, Ingleside School,</i>	New Milford, Conn.
Story, Oliver Ewell, <i>Student,</i>	East Boston.
Tolman, Fred Harold, <i>Student,</i>	Brockton.
Vance, Mary Bernice, <i>Student,</i>	Brookline.
Whipple, Stanley Cornell, <i>Student,</i>	Worcester.

## FRENCH.

Fillebrown, Lucie Reed, <i>Teacher, Bronson Private School, Providence, R.I.</i>	Brockton.
Gould, Arthur Linwood, <i>Sub-Master, Lewis School, Boston,</i>	Rockland.
Hutchinson, Harriet Eliza, <i>Assistant, Charlestown High School,</i>	Boston.
Kelly, Mary Grattan,	Washington, D.C.
Murdoch, Rose Anita, <i>Teacher, Ingleside School,</i>	New Milford, Conn.
Scott, Emma Byron, <i>Principal, Washington Seminary,</i>	Atlanta, Ga.
Woodward, Blanche Delphina, <i>Teacher, Miss Howe's School, Salem,</i>	Stoneham.

## GEOGRAPHY.

Bryant, Frank Laverne, s.B. ( <i>St. Lawrence Univ.</i> ), <i>Instructor, Erasmus Hall High School,</i>	Brooklyn, N.Y.
Corlett, Bessie May, <i>Teacher, Elementary Schools,</i>	Cleveland, O.
Cushing, Sumner Webster, s.B. ( <i>Harvard Univ.</i> ), <i>Instructor, Salem Normal School,</i>	Brockton.
Franzén, Hilvine Anderson, <i>Teacher, Graded Schools,</i>	St. Paul, Minn.
Johnson, Elizabeth, <i>Teacher, Speyer School of Teachers' College,</i>	Parkersburg, W.Va.
Marlow, Kyle Fayette, L.B. ( <i>Univ. of Minnesota</i> ), <i>Principal,</i>	Minneapolis, Minn.
Meigs, Mary Louise, <i>Teacher, School for the Deaf,</i>	Rochester, N.Y.
Packard, Leonard Oscar, s.B. ( <i>Harvard Univ.</i> ), <i>Head of Department of Science, Boston Normal School, Boston,</i>	Rockland, Me.
Strachan, Mary Gibb, <i>Teacher, Elementary Schools,</i>	Cleveland, O.
Tilton, Charles Elliott, Jr., <i>Student,</i>	York Harbor, Me.

## GEOLOGY.

## FIELD WORK.

Brodrick, Carleton Thayer, <i>Student,</i>	Newton Highlands.
Broidrick, Thomas Joseph, <i>Student,</i>	Jamaica Plain.
Curtis, Edward Gilman, <i>Student,</i>	Machias, Me.
d'Esté, John Newport, <i>Student,</i>	Salem.
Fassett, Jacob Sloat, Jr.	Elmira, N.Y.
Lahee, Frederick Henry, A.B. ( <i>Harvard Coll.</i> ), <i>Student,</i>	Cambridge.
Merwin, Herbert Eugene, <i>Student,</i>	Hensonville, N.Y.
Nieman, Henry William, <i>Student,</i>	Cambridge.
Varnam, Leon Edward, <i>Student,</i>	Lawrence.
Varney, Burton Merrill, A.B. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Lawrence.
Wells, E. E., s.B. ( <i>Amherst Coll.</i> )	Hatfield.

## GERMAN.

## INTERMEDIATE COURSE.

Adams, Louise, A.B. ( <i>Boston Univ.</i> ), <i>First Assis- tant, High School, Scituate,</i>	So. Boston.
Ames, Mary Edith, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher, High School,</i>	Medford.

- Beisser, Anna Fredrika, *Teacher, Public Schools, Egg Harbor City, N. J.* Reading, Pa.
- Brewer, Margaret Halsey, *Teacher, Western High School,* Washington, D.C.
- Copeland, Pearl Vivian, A.B. (*Boston Univ.*), *Teacher, Maynard High School,* Chelsea.
- Dixon, William James, A.B. (*Cambridge Univ., England*), A.M. (*Harvard Univ.*), S.T.B. (*Episc. Theol. School, Cambridge*), *Clergyman,* So. Boston.
- Ely, Catherine Beach, PH.B. (*Oberlin Coll.*), A.M. (*ibid.*), *Teacher, Elizabeth College, Charlotte, N. C.* E. Orleans.
- Gompf, Clara Cecelia, *Teacher, Stevens High School,* Lancaster, Pa.
- Hyde, Charles William, A.B. (*Cornell Coll.*), *Teacher, Centenary Collegiate Institute, Hackettstown, N. J.* Corning, N.Y.
- King, Cloyes, *Student,* Cambridge.
- Locke, Eugenia, A.B. (*Wellesley Coll.*), *Teacher, Perkins Institution for the Blind,* Hampton, N.H.
- Marvin, Eugenia, PH.B. (*Alfred Univ.*), *Teacher, Free Academy,* Elmira, N.Y.
- Odell, Lawrence Gleason, *Student,* Roxbury.
- Perley, Fannie, *Teacher, Robinson Seminary, Exeter, N. H.* Lebanon, N.H.
- Rogers, Marguerite Herrick, A.B. (*Mt. Holyoke Coll.*), *Teacher, High School,* Bangor, Me.
- Sadler, Vivian, *Superintendent of Schools,* Belpre, O.
- Smith, Hattie, A.M. (*Richmond Coll.*), *Teacher,* Richmond, Va.
- Stull, Noah Henry, S.B. (*Ohio Northern Univ.*), *Teacher, Superintendent,* De Graff, O.
- Theisinger, Anna Elizabeth, *Teacher, Public Schools, Boston,* Roslindale.
- Tinkham, Selwyn Garfield, *Student,* Providence, R.I.
- Treudley, Mary, A.B. (*Ohio Univ.*), *Teacher, High School, Union City, Ind.* Athens, O.
- White, John Richards, A.B. (*Yale Univ.*), *Teacher, St. Mark's School, Southborough,* Providence, R.I.
- Wunder, Clara Meyers, *Teacher, High School, Egg Harbor City, N.J.* Sharon Hill, Pa.
- Yens, Helene Grote, *Teacher,* Cambridge.

## GOVERNMENT.

## CIVIL GOVERNMENT.

Britt, Starkey Young, LL.B. ( <i>National Univ.</i> ), <i>Officer, United States Army,</i>	Washington, D.C.
Kendrick, Benjamin Burks, S.B. ( <i>Mercer Univ.</i> ), <i>Teacher, Secondary Industrial School,</i>	Columbus, Ga.
Neal, Nannie Alice, S.B. ( <i>Grove City Coll.</i> ), <i>Teacher,</i>	Pulaski, Pa.
O'Neil, Alice, <i>Master's Assistant, Elementary School,</i>	Dorchester.
Quinn, Thomas Charles, <i>Student,</i>	Salem.
Ritchie, Ada Marcy, <i>Teacher, High School,</i>	Toledo, O.
Tebbetts, Frank Pierson, LL.B. ( <i>Boston Univ. Law School</i> ), <i>Attorney at Law,</i>	Salem.

## MUNICIPAL GOVERNMENT.

Bond, Hugh Lennox, <i>Student,</i>	Baltimore, Md.
Broun, Irving Sterling, <i>Student,</i>	New York, N.Y.
Burbank, Charles Elsworth, LL.B. ( <i>Boston Univ.</i> ), <i>Lawyer,</i>	Boston.
Coker, Francis William, A.B. ( <i>Harvard Univ.</i> ), <i>Instructor, University of Missouri, Columbia, Mo.</i>	Darlington, S.C.
Goodale, Fairfield, <i>Student,</i>	Cambridge.
Greenough, Alfred, <i>Student,</i>	Brookline.
Hill, Everett Melville, <i>Student,</i>	Roxbury.
House, Beverly Pryor, A.B. ( <i>State Coll. of Kentucky</i> ), A.M. ( <i>ibid.</i> ), <i>Student,</i>	Manchester, Ky.
Kaltenborn, Hans von, <i>Student,</i>	Cambridge.
Keeling, Wilford Henry, <i>Student,</i>	Sergeants Bluffs, Ia.
Kempner, Clarence, <i>Lawyer,</i>	Brooklyn, N.Y.
Lilly, William, <i>Student,</i>	Lambertville, N.J.
Lo, Pan Hui, <i>Student,</i>	Canton, China.
Mayer, Juan Randolph,	Philadelphia, Pa.
Sears, Edward Henry, <i>Student,</i>	Boston.

## GREEK.

## GREEK FOR BEGINNERS.

Burnet, Arthur Russell, <i>Student,</i>	E. Orange, N.J.
Fairfax, Mary Cecelia, <i>Teacher, Miss Chapin's School for Girls,</i>	New York, N.Y.

- Head, Walter Dutton, A.B. (*Harvard Univ.*), *Instructor, Phillips Exeter Academy, Exeter, N.H.* Somerville.  
 Spaulding, John Austin, *Student,* Tewksbury.  
 Strickler, Virginia Margaret, *Teacher, Mary Baldwin Seminary,* Staunton, Va.

## ADVANCED GREEK.

- Clarke, Susannah Lowell, A.B. (*Bryn Mawr*), *Teacher, St. Agnes School, Albany, N. Y.* Boston.  
 Kimball, Mary Alice, *Student,* Newtonville.  
 Strickler, Virginia Margaret, *Teacher, Mary Baldwin Seminary,* Staunton, Va.

## HISTORY.

## MEDIAEVAL EUROPEAN HISTORY.

- Buck, Evelyn Mary, A.B. (*Wellesley Coll.*), *Teacher, Free Academy,* Utica, N.Y.  
 Bushnell, Emma Lyman, A.B. (*Rockford Coll.*), *Teacher, Burr and Burton Seminary, Manchester, Vt.* Beloit, Wis.  
 Hall, Edna, *Teacher, Lansdowne, Pa.* Wissahickon, Pa.  
 Heckel, Albert Kerr, A.B. (*Roanoke Coll.*), A.M. (*ibid.*), *Head of Department of History, State Normal School, Indiana, Pa.* Allegheny, Pa.  
 Hobbs, Jane Elizabeth, PH.B. (*Grove City Coll.*), *Teacher, High School,* Washington, Pa.  
 Kuhn, Orta Edward, LITT.B. (*Baker Univ.*), *Professor, High School, Tucson, Ariz.* Baldwin, Kan.  
 Marsh, Miles Eugene, A.B. (*Oberlin Coll.*), *Dean of Academy, Berea College,* Berea, Ky.  
 Ryan, Mary Elizabeth, *Teacher, Grammar School, So. Ashburnham,* Fitchburg.  
 Tashjian, Nishan Der Sarkis, *Student,* Boston.  
 Tooker, Christine, *Assistant, High School,* Caribou, Me.  
 White, Mary Josephine, *Principal, Private School, Portland, Me.* Peekskill, N.Y.  
 Wiswell, Lillian Abbie, *First Assistant, Dearborn School,* Boston.

## ROMAN HISTORY.

- Alley, Alden Gifford, Jr., A.B. (*Harvard Univ.*), *Assistant Head Master, Manor School, Stamford, Conn.* Chelsea.



- Barr, John Ernest, A.B. (*Bates Coll.*), *Teacher, High School*, Lowell.
- Bennett, Martha Crosby, A.B. (*Cornell Univ.*), *Teacher, High School, Passaic, N.J.* Brooklyn, N.Y.
- Billings, Bliss Washington, PH.B. (*DePauw Univ.*), A.M. (*ibid.*), *Teacher, William McKinley High School*, St. Louis, Mo.
- Carlisle, Elisabeth, *Teacher, Wilmington High School*, Wilmington, Del.
- Kelly, Shaun, *Student*, Cambridge.

## AMERICAN HISTORY.

- Allan, Lula, *Teacher, Practice School, Howard University*, Washington, D.C.
- Bump, Elizabeth Washburne, PH.B. (*Cornell Univ.*), *Teacher, Normal School, Plattsburg, N.Y.* Ithaca, N.Y.
- Crowell, Alice Maud, *Teacher, Dudley School, Boston*, Somerville.
- Johnson, Elizabeth, *Teacher, Speyer School of Teachers' College*, Parkersburg, W.Va.
- Leavitt, Laura Smith, A.B. (*Boston Univ.*), *Assistant, High School*, Ayer.
- Mayze, Mary Catherine, *Teacher, Public School*, Detroit, Mich.
- Merrill, Charles Curtis Boardman, *Student*, Malden.
- Newell, Caroline Seville, *Teacher, Public Schools*, Topeka, Kan.
- Ritchie, Ada Marcy, *Teacher, High School*, Toledo, O.
- Taylor, Florence Ethel, *Student*, Olean, N.Y.
- Wade, Lucy Wallace, *Teacher, Ford School*, Lafayette, Ind.
- White, Laura Bradstreet, *Special Instructor, Girls' High School, Boston*, Brighton.
- Wiley, Jennie Agnes, PH.B. (*Normal Coll.*), *Teacher*, Rensselaer, N.Y.
- Wood, Augusta Mervine, *Teacher, Hyde School, Boston*, Roxbury.
- Wyner, Maurice Edward, *Student*, Dorchester.

## LATIN.

## FOR TEACHERS.

- Clough, Bertha, A.B. (*Columbia Univ.*), *Teacher, State Normal School, Geneseo, N.Y.* Lock Haven, Pa.
- Collins, Alice Wakefield, A.B. (*Bates Coll.*), *Instructor, High School*, Concord, N.H.
- Cousins, Solon Bolivar, A.B. (*Mercer Univ.*), *Teacher, Locust Grove Institute, Locust Grove, Ga.* Luthersville, Ga.

Dunn, Anna, A.B. ( <i>Allegheny Coll.</i> ), <i>Instructor, High School,</i>	Meadville, Pa.
Fetterly, Clarence Aubrey, A.B. ( <i>Hamilton Coll.</i> ), <i>Teacher,</i>	Cape Vincent, N.Y.
Ford, Florence, A.B. ( <i>Boston Univ.</i> ), <i>Teacher, High School, Goffstown, N.H.</i>	Cambridge.
Frederick, Clara Harriet, A.B. ( <i>Vassar Coll.</i> ), <i>Teacher, High School, Wakefield,</i>	Melrose.
Kimmons, May, A.B. ( <i>Oberlin Coll.</i> ), <i>Teacher, High School,</i>	Findlay, O.
McCarley, Henry Hood, S.B. ( <i>Coll. of Charleston</i> ), <i>Principal, Orr Mill School,</i>	Anderson, S.C.
Milne, George Parker, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher, St. Paul's School,</i>	Concord, N.H.
Randolph, Joseph Benjamin, A.B. ( <i>New Orleans Univ.</i> ), <i>Teacher, Wiley University,</i>	Marshall, Tex.
Redman, Elsie Florence, A.B. ( <i>Normal Coll., N. Y.</i> ), <i>Teacher, Public School, No. 77,</i>	New York, N.Y.
Rowell, Margaret Isabelle, A.M. ( <i>Grove City Coll.</i> ), <i>Principal, New Richmond High School,</i>	Girard, Pa.
St. Rose, Sister, <i>Teacher, St. Mary's Academy,</i>	Graceville, Minn.
Sherburne, Annie Laurie, A.B. ( <i>Univ. of Vermont</i> ), P.D.B. ( <i>New York State Normal Coll.</i> ), <i>Teacher,</i>	North Pomfret, Vt.
Smith, Ernest Ketcham, A.B. ( <i>Wesleyan Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher, Central High School,</i>	Cleveland, O.
Stansell, Charles Vernon, A.B. ( <i>Furman Univ.</i> ), <i>Instructor, Furman Fitting School,</i>	Greenville, S.C.
Stone, Grace, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher, Wad- leigh High School,</i>	New York, N.Y.
Treudley, Mary, A.B. ( <i>Ohio Univ.</i> ), <i>Teacher, High School, Union City, Ind.</i>	Athens, O.

## VIRGIL.

Adelaide, Sister Mary, <i>Teacher, Winona Seminary,</i>	Winona, Minn.
Clough, Bertha, A.B. ( <i>Barnard Coll.</i> ), <i>Teacher, State Normal School, Geneseo, N. Y.</i>	Lock Haven, Pa.
Flichtner, Frederic Appleton, A.B. ( <i>Amherst Coll.</i> ), <i>Teacher, St. Mark's School,</i>	Southborough.
Matthews, Myra Émilie, A.B. ( <i>Columbia Univ.</i> ), <i>Teacher, High School,</i>	Orange, N.J.
Miller, Anna Bertha, A.B. ( <i>Woman's Coll. of Balti- more</i> ), <i>Instructor, High School,</i>	W. Chester, Pa.

- Milne, George Parker, A.B. (*Harvard Univ.*), A.M.  
*(ibid.)*, Teacher, *St. Paul's School*, Concord, N.H.  
 Nash, James Vincent, *Secretary to Steamship Agent*, Boston.  
 Pratt, Jane Hulburd, A.B. (*Elmira Coll.*), Teacher,  
*Preceptress, High School*, Waverly, N.Y.  
 Whitaker, John Holland, Teacher, Boston.  
 Wilkinson, Mary Ella, Teacher, *High School*, Elkhart, Ind.

## MATHEMATICS.

### ADVANCED ALGEBRA.

- Anthony, Andrew Weeks, *Student*, Beverly Farms.  
 Christ, Haldy Miller, PH.B. (*Bucknell Univ.*),  
*Teacher, Preparatory School, Swarthmore, Pa.* Millersville, Pa.  
 Duffy, Josephine Verna, Teacher, *Public Schools*, Upper Lehigh, Pa.  
 Jerome, Jessie Maria, PH.B. (*Hiram Coll.*), Teacher,  
*Hiram College, Hiram, O.* Randolph, O.  
 King, Cloyes, *Student*, Cambridge.  
 Lesser, Mary Christine, M.E. (*W. Chester Normal*),  
*Teacher, Public Schools*, Upper Lehigh, Pa.  
 Munroe, Robert Gookin, *Student*, Lexington.  
 Odell, Lawrence Gleason, *Student*, Roxbury.  
 Seymour, Mary Frances, A.B. (*Mt. Holyoke Coll.*),  
*Teacher, High School, LeRoy, N.Y.* Winsted, Conn.  
 Stutzman, Ada Mary, S.B. (*Buchtel Coll.*), Teacher,  
*High School*, Akron, O.  
 Su, Clement C, *Student*, Anhui, China.  
 Turney, George Joseph, A.B. (*Austin Coll.*), Teacher,  
*Rust University, Holly Springs, Miss.* Effingham, Ill.  
 Vinal, Eugene Robinson, A.B. (*Harvard Univ.*),  
 A.M. (*ibid.*), Teacher, Winter Hill.  
 Wier, Jennie Estelle, A.B. (*Boston Univ.*), Teacher,  
*High School*, Reading.

### SOLID GEOMETRY.

- Chin, Yu Shu, *Student*, Anhui, China.  
 Huang, Chen Hua, *Student*, Canton, China.  
 Liang, Ying Chi, *Student*, Amherst.  
 Macgowan, Kenneth Roscoe, *Student*, Winthrop.  
 Scanlan, Walter Leo, *Student*, Dorchester.  
 Shepherd, Gertrude, *Student*, Cambridge.  
 Starr, Samuel, *Student*, Roxbury.  
 Tong, Yung Li, *Student*, Canton, China.

## TRIGONOMETRY.

Chin, Yu Shu, <i>Student</i> ,	Anhui, China.
Henderson, James Langston, <i>Teacher, Payne University</i> ,	
Huang, Chen Hua, <i>Student</i> ,	Selma, Ala.
Huntress, Leonard, Jr., <i>Student</i> ,	Canton, China.
Lewis, Mary Pratt, L.B. ( <i>Smith Coll.</i> ), <i>First Assistant, High School</i> ,	Lowell.
Wright, Frank, <i>Student</i> ,	Collinsville, Conn.
	Cambridge.

## ANALYTICAL GEOMETRY.

DeComps, Pauline Louise, <i>Teacher, Public School, No. 141</i> ,	Brooklyn, N.Y.
Dixon, Edna Leola, <i>Teacher, Preparatory School</i> ,	Baltimore, Md.
Hooper, James Everett, <i>Student</i> ,	East Northfield.
Howe, Lawrence, <i>Student</i> ,	Boston.
Iwaya, Kichizo, <i>Student</i> ,	Tokyo, Japan.
Jones, Frank Cazenove, Jr.	Wellesley.
Littlefield, Vera Wells, A.M. ( <i>Radcliffe Coll.</i> ), <i>Teacher</i> ,	Boston.
McLeod, John Thomas, <i>Principal, High School</i> ,	New Glasgow, N.S.
Rawley, Jessie, <i>Assistant, Public Schools</i> ,	Philadelphia, Pa.
Webster, Arthur Roy, A.B. ( <i>Univ. of Vermont</i> ), <i>Teacher, High School</i> ,	Medford.
Wolston, Edward Shannon, <i>Student</i> .	Sharon.

## CALCULUS.

Adkins, Frances, A.B. ( <i>Denison Univ.</i> ), A.B. ( <i>Vassar Coll.</i> ), <i>Department of Mathematics and Physics, Bishop College, Marshall, Tex.</i>	Granville, O.
Barroll, Lee, <i>Student</i> ,	Elizabeth, N.J.
Connor, Matthew Francis, S.B. ( <i>McGill Univ.</i> ),	Ottawa, Ont.
Dodge, Albert, Jr., S.B. ( <i>Harvard Univ.</i> ) <i>Chamber of Commerce, Boston</i> ,	Gloucester.
Durrell, Harold Clarke, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Cambridge.
Knapp, Allen Howe, S.B. ( <i>Harvard Univ.</i> ), <i>Teacher, Head of Department of Mathematics, Central High School</i> ,	Springfield.
Fairfax, Mary Cecelia, <i>Teacher, Miss Chapin's School for Girls</i> ,	New York, N.Y.
Liu, Jiu Heng, <i>Student</i> ,	Tientsin, China.

Minnick, John Dufton, A.M. ( <i>George Washington Univ.</i> ), <i>Teacher, High School of Commerce,</i>	New York, N.Y.
Mott, Frank Earle, PH.C. ( <i>Massachusetts Coll. of Pharmacy</i> ), <i>Student,</i>	Boston.
Mulcahy, Annie Mary, <i>Assistant, High School,</i>	So. Boston.
Reynolds, Frank James, <i>Student,</i>	Brighton.
Siviter, Arthur Benjamin, PH.B. ( <i>Yale Univ.</i> ), <i>Teacher, Shady Side Academy,</i>	Pittsburg, Pa.
Tinkham, Selwyn Garfield, <i>Student,</i>	Providence, R.I.
Tobien, Arthur Patten Davis, A.B. ( <i>Bates Coll.</i> ), <i>Teacher, Rand Collegiate School,</i>	Trenton, N.J.

## MUSIC.

### HARMONY AND COUNTERPOINT.

Atwood, James Burton, <i>Organist,</i>	Hyde Park.
Barnes, Henry Alexander, <i>Teacher, Normal and Industrial Institute,</i>	Snow Hill, Ala.
Calvin, Otis Waldo, <i>Student,</i>	Nashville, Ind.
Downes, Edwin Olin, <i>Student,</i>	Cambridge.
Goodwin, Eva Adelaide, <i>Teacher, Walnut Hill School, Natick,</i>	Boston.
Green, Merrill Holden, A.B. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Jamaica Plain.
Harrison, Kate, <i>Student-Teacher, Bethel Female College,</i>	Hopkinsville, Ky.
Lincoln, Sara Jane, <i>Teacher,</i>	Hingham.

### ANALYSIS OF MUSIC.

Bogert, Langdon, <i>Student,</i>	Providence, R.I.
Brown, Percy Whiting, <i>Student,</i>	Concord.
Dillingham, Norman Slade, <i>Student,</i>	Chelsea.
Green, Merrill Holden, A.B. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Jamaica Plain.
Kemble, Francis Walker, <i>Student,</i>	Philadelphia, Pa.
Langshaw, Walter Seymour, <i>Student,</i>	Cambridge.
Lilienthal, Albert Max, <i>Student,</i>	New York, N.Y.
McVickar, Henry Lansing, <i>Student,</i>	Mamaroneck, N.Y.
Pinanski, Abraham Edward, <i>Student,</i>	Roxbury.
Prince, Clara Coffin, <i>Teacher, State Normal School,</i>	Bridgewater.
Rodgers, James Donald Cameron, <i>Student,</i>	Fort Meade, So. Dak.
Savery, James Cox, <i>Student,</i>	Anaconda, Mont.
Stubbs, Ethel, <i>Student,</i>	Merion Station, Pa.



Wagstaff, Samuel Jones, <i>Student</i> ,	Cambridge.
Wambaugh, Sarah, A.B. ( <i>Radcliffe Coll.</i> ),	Cambridge.
Warren, Charles Jesse, <i>Student</i> ,	Dorchester.
Whitney, James Scollay, <i>Student</i> ,	Brookline.

### NATURE STUDY.

Burns, Clifford Clare, <i>Student</i> ,	Platteville, Wis.
Glynn, Ella Frances, <i>Teacher</i> , <i>West School</i> ,	Meriden, Conn.
Hall, Helen Mary, <i>Teacher</i> , <i>Primary School</i> , <i>So. Easton</i> ,	Orleans.
Hall, Kathleen Marion, <i>Teacher</i> , <i>Huntington School</i> , <i>Brockton</i> ,	Orleans.
James, Elizabeth Kingston, <i>Teacher</i> , <i>Public Schools</i> ,	Philadelphia, Pa.
Johnson, Sara Grace, <i>Principal</i> , <i>Grammar School</i> ,	Brandon, Vt.
McCaffrey, Bertha, <i>Teacher</i> , <i>Arlington, N.J.</i>	Boston.
Olson, Alvin Bennie, <i>Principal</i> , <i>High School</i> , <i>Hazel Green, Wis.</i>	Blanchardville, Wis.
Sawyer, Martha Susan, <i>Teacher</i> , <i>Drake School</i> ,	Stoughton.
Towne, Lillian May, <i>Teacher</i> , <i>Normal School</i> , <i>Boston</i> ,	Brighton.
Vanston, Mary Blanche, <i>Teacher</i> ,	Stoughton.
Wilkinson, Guerdon Robert, <i>Student</i> ,	Platteville, Wis.

### PHILOSOPHY.

#### INTRODUCTION TO PHILOSOPHY.

Alexander, Georgia, <i>Supervising Principal</i> , <i>Public Schools</i> ,	Indianapolis, Ind.
Bigler, John Fremont, A.B. ( <i>Grove City Coll.</i> ), A.M. ( <i>ibid.</i> ), <i>Principal</i> , <i>State Normal School</i> ,	Edinboro, Pa.
Bradley, Elizabeth Lucinda, <i>Teacher</i> , <i>High School</i> , <i>Troy, N.Y.</i>	Cato, N.Y.
Browning, Laura Coleman, S.B. ( <i>New York Univ.</i> ), <i>Principal</i> , <i>Girls' School</i> , <i>Detroit, Mich.</i>	Cambridge.
Chao, T'ien Lin, <i>Student</i> ,	Tientsin, China.
Chin, T'ai, <i>Student</i> ,	Tientsin, China.
Christ, Haldy Miller, PH.B. ( <i>Bucknell Univ.</i> ), <i>Teacher</i> , <i>Swarthmore Preparatory School</i> , <i>Swarthmore, Pa.</i>	Millersville, Pa.
Chung, Shih Ming, <i>Student</i> ,	Tientsin, China.
Elderkin, Ella Clara, <i>Principal</i> , <i>Niantic School</i> , <i>Westerly, R.I.</i>	Roxbury.
Fay, Harriet Kelsey,	Churchville, N.Y.

Flagler, Edith Benjamin, <i>Teacher, Elementary School,</i>	Chicago, Ill.
Hart, Blanche Christine, <i>Teacher, High School,</i>	New Brunswick, N.J.
Hines, Herbert Waldo, <i>Student,</i>	Melrose.
Lewis, Edward Rust, A.B. ( <i>Ohio State Univ.</i> ), <i>Student,</i>	Columbus, O.
Li, Chia T'ung, <i>Student,</i>	Tientsin, China.
Ma, Tai Chün, <i>Student,</i>	Tientsin, China.
McLeod, John Thomas, <i>Principal, High School,</i>	New Glasgow, N.S.
Maddren, Russell Flint, <i>Student,</i>	Brooklyn, N.Y.
Pennell, Charles Melvin, A.B. ( <i>Bowdoin Coll.</i> ), <i>Superintendent of Schools, Brunswick and Free- port, Me.</i>	Brunswick, Me.
Powell, Frank Abram, <i>Pastor, First Unitarian Church,</i>	Helena, Mont.
Price, William Gibbons, <i>Principal, Gloucester Agricultural and Industrial School,</i>	Cappahosic, Va.
Treudley, Frederick, A.B. ( <i>Indiana Univ.</i> ), A.M. ( <i>Hiram Coll.</i> ), <i>Professor, Ohio University,</i>	Athens, O.
Tufts, George Henry, <i>Student,</i>	Arlington Heights.
Williams, Sarah Holbrook, A.B. ( <i>Smith Coll.</i> ), A.M. ( <i>Columbia Univ.</i> ), <i>Kindergartner, Public Schools, Boston,</i>	Dorchester.
Wu, Kaimoh, <i>Student,</i>	Shanghai, China.
Wyner, Maurice Edward, <i>Student,</i>	Dorchester.
Wynne, Mary Eleanor, <i>Assistant, Girls' High School,</i>	Boston.

## INTRODUCTION TO ETHICS.

Chin, T'ai, <i>Student,</i>	Tientsin, China.
Chung, Shih Ming, <i>Student,</i>	Tientsin, China.
Cox, Laura Spencer, <i>Teacher, West School,</i>	Malden.
Dow, Elsie Storrs, A.B. ( <i>Wheaton Coll.</i> ), <i>Pro- fessor, Wheaton College,</i>	Wheaton, Ill.
Fay, Marjorie, <i>Student,</i>	Wollaston.
Galger, George Homer, <i>Superintendent of Schools, Hyannis,</i>	Roxbury.
Graves, Henrietta Louisa, <i>Teacher, Hampton Insti- tute, Hampton, Va.</i>	Waltham.
Hunt, Myra Evelyn, <i>Teacher, Bridgewater State Model School,</i>	Bridgewater.
Hutchins, William James, A.B. ( <i>Yale Univ.</i> ), <i>Pro- fessor, Oberlin Seminary,</i>	Oberlin, O.

Kingman, Frederic William, <i>Superintendent of Schools, Walpole and Medfield,</i>	Walpole.
Li, Chia T'ung, <i>Student,</i>	Tientsin, China.
Ma, Tai Chün, <i>Student,</i>	Tientsin, China.
Maddren, Russell Flint, <i>Student,</i>	Brooklyn, N.Y.
Ogburn, William Fielding, s.B. ( <i>Mercer Univ.</i> ), <i>Assistant Principal, The Darlington School,</i>	Rome, Ga.
Sawtelle, Pauline Coolidge, <i>Teacher, West School,</i>	Malden.
Taylor, Frances Morgan, L.I. ( <i>Peabody Normal Coll.</i> ), <i>Teacher, Public Schools,</i>	Memphis, Tenn
ThurLOW, Edward Kimball, <i>Student,</i>	West Newbury.
Treudley, Frederick, A.B. ( <i>Indiana Univ.</i> ), A.M. ( <i>Hiram Coll.</i> ), <i>Professor, Ohio University,</i>	Athens, O.
Tufts, George Henry, <i>Student,</i>	Arlington Heights.
Warren, Charles Jesse, <i>Student,</i>	Dorchester.
Winkler, Helen,	Cincinnati, O.
Wolf, Horace Joseph, A.B. ( <i>Univ. of Cincinnati</i> ), <i>Student,</i>	Cincinnati, O.

## PHYSICAL EDUCATION.

### PRACTICE.

Aird, Margaret Helen, <i>Student,</i>	Winnipeg, Manitoba, Can.
Andrews, Elizabeth Emma, <i>Student Assistant,</i>	Cambridge.
Armbruster, Amelia Emma, <i>Director, State Normal School,</i>	Oneonta, N.Y.
Auten, Esther Hall, A.B. ( <i>Oberlin Coll.</i> ), <i>Physical Director, Cleveland Y. W. C. A.</i>	Monica, Ill.
Bailey, Winthrop Carl, Jr., <i>Military Instructor, Riverview Military Academy, Poughkeepsie, N. Y.</i>	Hudson.
Barnes, Ralph Frost, <i>Teacher, Posse Gymnasium, Boston,</i>	Marlboro.
Barrett, Sarah Eliza, <i>Teacher of Mathematics and Gymnastics, Coburn Classical Institute,</i>	Waterville, Me.
Beidleman, Jessie Corinne, <i>Physical Instructor, Y. W. C. A.</i>	Buffalo, N.Y.
Belding, Alice Hamilton, A.B. ( <i>Vassar Coll.</i> ), <i>Student,</i>	Poughkeepsie, N.Y.
Betteridge, Lawrence Augustine, <i>Student and Assistant Physical Director, Phillips Academy, Andover,</i>	Providence, R.I.
Blood, Ernest Artell, <i>Teacher, State Normal and Training School,</i>	Potsdam, N.Y.
Brodrick, Elsie Mabel, <i>Teacher, Friends' School,</i>	Wilmington, Del.

- Bruner, Helen Meredith, *Teacher, Public Schools*, Detroit, Mich.  
 Carret, Edna Phelps, *Director, Physical Training*, Roxbury.  
*Milton*, Chicago, Ill.  
 Caverno, Cora, *Principal, Grammar School*,  
 Cavers, Jean Sutherland, *Teacher, School for Girls*, Oakville, Ont.  
*Columbus, O.*  
 Chandler, Virginia, *Fencing Teacher, Private Classes of Corrective Gymnastics*, Boston, New York, N.Y.  
 Chapman, Ernest Arthur, *Gymnasium Director, St. Andrew's College*, Toronto, Ont. Hamilton, Ont.  
 Clark, James Morrison, *General Secretary, Y. M. C. A.* Sydney Mines, N.S.  
 Colter, Joseph, *Physical Director and Athletic Coach, High School, Holyoke*, Suffield, Conn.  
 Cook, William Wilder, *Student*, Brookline.  
 Coop, Emma Katharina, *Student*, Providence, R.I.  
 Cornish, Emily Belinda, A.M. (*Bates Coll.*), *Teacher, High School, Beverly*, Lewiston, Me.  
 Correll, Grace Violet, *Teacher, High School*, E. Orange, N.J.  
 Crowell, Archie Durkee, *Assistant Physical Instructor, Massachusetts School for Feeble Minded*, Waverley.  
 Currier, Hilda Leonard, *Teacher, Public Schools, Toledo, O.* Boston.  
 Darling, John Chester, A.B. (*Univ. of Oklahoma*), *Physical Director, Epworth University, Oklahoma City*, Enid, Okla.  
 Davis, Julia Eliza, *Teacher, Public Schools*, Washington, D.C.  
 Davis, Philip, A.B. (*Harvard Univ.*), *Social Worker, Civic Service House*, Boston.  
 Dillon, Helen Marie, *Artistic Gymnastics*, Cortland, N.Y.  
 Dillon, Margarette Agnes, Cortland, N.Y.  
 Driscoll, John Joseph, *Teacher, Municipal Gymnasium, Boston*, E. Boston.  
 Emhardt, May Florence, *Teacher, Public Schools*, Philadelphia, Pa.  
 Fessenden, Llewella Margaret, A.B. (*Oberlin Coll.*), *Physical Director, Y. W. C. A.* Sioux City, Ia.  
 Fischer, Edna Salome, *Teacher, Tilton Seminary*, Arlington.  
 Fitzmeyer, Ethel Mavor, *Teacher, Y. W. C. A., Detroit, Mich.* Revere.  
 Flagg, Ruth Esther, *Student*, Boston.  
 Frazer, George Edward, *Assistant Physical Director, Cornell University, Ithaca, N. Y.* Boston.

- Gilligan, Timothy Joseph, *Swimming Instructor*,  
*North End Park*, Boston.
- Goodspeed, Josephine Lurana, *Head of Department*  
*of Elocution, Acadia Seminary*, Wolfville, N.S.
- Graves, Myra Norris, *Assistant Physical Director*,  
*Public Schools*, Atlanta, Ga.
- Hale, Wilfred Silvester, M.D. (*Albany Med. Coll.*),  
*Physician, Demonstrator of Anatomy, Albany*  
*Medical College*, Albany, N.Y.
- Hallett, Marion Marble, *Teacher*, So. Boston.
- Harmon, Cassandra Belle, *Director of Physical*  
*Training, Normal School*, Geneva, N.Y.
- Haxall, Susan Noland, *Teacher*, Washington, D.C.
- Hayson, Merrian Charles, *Student*, Kenilworth, D.C.
- Heffer, Emma Ida, *Instructor, Ladies' Private Gym-*  
*nasium*, St. John, N.B., Can.
- Henderson, Edwin Bancroft, *Teacher, Public Schools*,  
*Washington, D. C.* Falls Church, Va.
- Hicks, Louisa Putnam, *Physical Director, Y. W.*  
*C. A., Seattle, Wash.* Worcester.
- Holmes, Sidney Spencer, *Physical Director, West-*  
*brook Seminary*, Portland, Me.
- Jenckes, Alice Emily, A.T.C.M. (*Conservatory Sch.*  
*of Expression and Physical Culture, Toronto,*  
*Ont.*), *Physical Instructor, Ladies' College,*  
*Halifax, N. S.* Sherbrooke, P.Q., Can.
- Johnson, Joseph Levien, B.D.I. (*Iowa State Normal*),  
*Student*, Huxley, Ia.
- Jones, Thomas Edward, B.D.I. (*Iowa State Normal*),  
M.D.I. (*ibid.*), *Student*, Cresco, Ia.
- Kelton, Leonora Marie, *Student*, Philadelphia, Pa.
- Knebel, Leo Charles, *Assistant Instructor, Municip-*  
*al Gymnasium, Boston*, So. Boston.
- Latham, Ethel Louisa, *Assistant Physical Director*,  
*Dobbs Ferry, N. Y.* Melrose.
- Latimer, Robert Lee, A.B. (*Brown Univ.*), *Student*, Montville, Conn.
- Lawrence, Edith Woods, A.B. (*Radcliffe Coll.*),  
*Teacher, High School, Concord, N. H.* Cambridge.
- Lentz, Suzanne Mark, S.B. (*Irving Coll.*), *Director*  
*of Physical Culture, Mt. Aloysius Academy,*  
*Cresson, Pa.* Altoona, Pa.
- Lovell, Eleanor Josephine, *Student*, Newport, N.H.



- Lowman, Guy Sumner, B.DI. (*Iowa State Normal*),  
B.P.E. (*Springfield Training School*), *Physical Director, High School*, Brookline.
- McCalmont, Eleanor Blanche, *Director of Gymnas- tics, Worcester Institute of Physical Exercise*, Chardon, O.
- McCloy, Charles Harold, PH.B. (*Marietta Coll.*),  
*Physical Director and Instructor in Biology, Marietta College*, Marietta, O.
- MacLaughlin, Josephine Anna, *Teacher, St. Paul's School*, Cambridge.
- McManus, Emily, A.M. (*Queen's Univ., Kingston, Can.*), *Teacher, Collegiate Institute*, Ottawa, Ont.
- Mason, Appleton Adams, *Physical Director, Uni- versity Preparatory School, Tonkawa, Okla.* Waverley.
- Mathis, Soflena Estella, *Physical Director*, Galesburg, Ill.
- May, Benjamin Dexter, A.B. (*Tufts Coll.*), A.M.  
(*Harvard Univ.*), *Principal, High School, Nantucket*, Needham.
- Mena, Aurora, *Teacher*, Havana, Cuba.
- Meyers, Clara Belle, *Substitute Teacher, Physical Training, Graded Schools*, Washington, D.C.
- Miller, Elizabeth Van Voorhes, *Teacher, Normal School*, Lock Haven, Pa.
- Moakley, Helen Theresa, *Student*, Ithaca, N.Y.
- Moor, Elizabeth Adams, *Teacher, Akeley Hall, Grand Haven, Mich.* Boston.
- Moore, Helen Morton, *Student*, Millbury.
- Murray, William Alexander, *Special Instructor, Y. M. C. U., Boston*, Milton.
- Muzzey, Anna Leonard, A.B. (*Radcliffe Coll.*),  
*Teacher, High School, Akron, O.* Lexington.
- Myers, Minnie Elizabeth, *Supervisor of Physical Training, Public Schools*, Youngstown, O.
- Oreon, Tens, *Physical Instructor, Posse Gymna- sium, Boston*, Roxbury.
- Overall, Lydia Linnie, S.B. (*Bardstown Coll.*),  
*Director Gymnastics, State School for Girls, Montevallo, Ala.* Louisville, Ky.
- Pearce, Winifred, *Teacher, Girls' House of Refuge, Philadelphia, Pa.* Manasquan, N.J.
- Perry, Florence Miranda, *Physical Director, Girls' Classical School, Indianapolis, Ind.* Winchester.

Pitman, William Springer, <i>Athletic Director, Galahad Club, Trinity Church,</i>	Newport, R.I.
Pope, Helen May, <i>Head Assistant, Public Schools,</i>	Chicago, Ill.
Potter, Mary Goddard, M.D. ( <i>N. Y. Med. Coll. and Hosp. for Women</i> ), <i>Gymnasium Director, Y. W. C. A., Brooklyn, N. Y.</i>	New York, N.Y.
Pritchette, Vergil Clayton, PH.B. ( <i>Elon Coll., N. C.</i> ), <i>Physical Director, Elon College,</i>	Elon College, N.C.
Roddy, Mary Ethelda, <i>Instructor, Physical Training, Indiana University,</i>	Bloomington, Ind.
Root, Hermine Eloise, <i>Teacher of Dancing,</i>	Cleveland, O.
Ross, Frances Josephine, <i>Instructor in Gymnastics, Women's Gymnasium, Hamilton Park,</i>	Chicago, Ill.
St. Clair, Margaret, <i>Student,</i>	Philadelphia, Pa.
St. George, Helen Hatley, <i>Assistant, Physical Training, Kemper Hall, Kenosha, Wis.</i>	Nashotah, Wis.
Samse, Leroy Perry, <i>Assistant to Physical Director, Indiana University, Bloomington, Ind.</i>	Kokomo, Ind.
Sanderlin, Rosalie Peyton, <i>Teacher of Physical Training, High Schools,</i>	Washington, D.C.
Sanders, Elsie, <i>Assistant in Physical Training, Public Schools,</i>	Washington, D.C.
Sargent, William Andrew, <i>Student,</i>	Bradford, Vt.
Sawin, Harriette Fisher, A.B. ( <i>Wellesley Coll.</i> ), <i>Student,</i>	Cambridge.
Schulte, Helen Lillian Fargo, <i>Student,</i>	So. Orange, N.J.
Schwind, Arthur F., <i>Student,</i>	Philadelphia, Pa.
Shepard, Ida Holland, <i>Teacher of Elocution,</i>	Beaumont, Tex.
Shriner, Elmer, M.E. ( <i>Juniata Coll.</i> ), <i>Supervisor of Physical Education,</i>	Akron, O.
Somers, Jean Margaret, <i>Teacher of Physical Training, Normal School,</i>	Toronto, Can.
Sputh, Carl Brosius, <i>Director of Physical Training, Butler College and Socialor Turnverein,</i>	Indianapolis, Ind.
Stier, Alma De Vere, S.B. ( <i>Neff Coll.</i> ), <i>Teacher, Keystone State Normal, Kutztown, Pa.</i>	New Market, Md.
Stoll, Irma, <i>Teacher, Montgomery Public School,</i>	Montgomery, Ala.
Swan, Annie Louise Darling, <i>Physical Director, State Normal School, Mansfield, Pa.</i>	Mattapan.
Sweitzer, Eleanor Phyllis, <i>Teacher, Public Schools,</i>	Chicago, Ill.
Thompson, Otis Alpheus, A.B. ( <i>Colby Coll.</i> ), <i>Professor of Chemistry and Physical Training, Wyoming Seminary, Kingston, Pa.</i>	Presque Isle, Me.

Tracy, Mildred Leavitt, <i>Instructor, Bernan Macfadden Institute,</i>	Hinckley, Me.
Tuttle, Evva, <i>Physical Director, Y. W. C. A., Lansing, Mich.,</i>	Oconomowoc, Mich.
Viall, Mildred Peck, <i>Student,</i>	Warren, R.I.
Wallace, Anna Eleanor, <i>Teacher, Elocution, Physical Training, and Dancing,</i>	Providence, R.I.
Wert, Florence Adele, <i>Teacher, Elementary School,</i>	Philadelphia, Pa.
White, Frank Warren, M.D. ( <i>Tufts Med. School</i> ), <i>Physical Director, Boston High Schools and Arlington Gymnasium Association,</i>	Arlington.
Williams, Lois Elmer, <i>Teacher, Alendo Preparatory School, Pittsburg, Pa.</i>	Quincy.
Williams, Mary Edith, A.M. ( <i>Univ. of Illinois</i> ), <i>Assistant, Women's Gymnasium, University of Illinois,</i>	Urbana, Ill.
Williamson, Etta Lucile, <i>Teacher, Gay Street Public School, West Chester, Pa.</i>	Philadelphia, Pa.
Wood, Murielle Ruth, <i>Director of Physical Culture, Public Schools, New Britain, Conn.</i>	Syracuse, N.Y.
Zarfos, Lewis Norman, <i>Teacher,</i>	Red Lion, Pa.

## THEORY.

Aird, Margaret Helen, <i>Student,</i>	Winnipeg, Manitoba, Can.
Banks, Mabel May, <i>Teacher, Livingstone College, Salisbury, N. C.</i>	Boston.
Beidleman, Jessie Corinne, <i>Physical Instructor, Y. W. C. A.</i>	Buffalo, N.Y.
Belding, Alice Hamilton, A.B. ( <i>Vassar Coll.</i> ), <i>Student,</i>	Poughkeepsie, N.Y.
Blood, Ernest Artell, <i>Teacher, State Normal and Training School,</i>	Potsdam, N.Y.
Chapman, Ernest Arthur, <i>Gymnasium Director, St. Andrew's College, Toronto, Ont.</i>	No. Hamilton, Ont.
Colter, James, <i>Physical Director and Athletic Coach, High School, Holyoke,</i>	Suffield, Conn.
Cook, William Wilder, <i>Student,</i>	Brookline.
Coop, Emma Katharina, <i>Student,</i>	Providence, R.I.
Cornish, Emily Belinda, A.M. ( <i>Bates Coll.</i> ), <i>Teacher, High School, Beverly,</i>	Lewiston, Me.
Crowell, Archie Durkee, <i>Assistant Physical Instructor, Massachusetts School for Feeble Minded,</i>	Waverley.
Davis, Julia Eliza, <i>Teacher, Public School,</i>	Washington, D.C.

Emhardt, May Florence, <i>Teacher, Elementary Public Schools,</i>	Philadelphia, Pa.
Fessenden, Emily Gertrude, <i>Student,</i>	Cambridge.
Frazer, George Edward, <i>Assistant Physical Director, Cornell University, Ithaca, N. Y.</i>	Boston.
Graves, Myra Norris, <i>Assistant Physical Director, Public Schools,</i>	Atlanta, Ga.
Hale, Wilfred Silvester, M.D. ( <i>Albany Med. Coll.</i> ), <i>Physician, Demonstrator of Anatomy, Albany Medical College,</i>	Albany, N.Y.
Hatch, Grace Evangeline, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher, Eastern High School,</i>	Detroit, Mich.
Haxall, Susan Noland, <i>Teacher,</i>	Washington, D.C.
Henderson, Edwin Bancroft, <i>Teacher, Public Schools, Washington, D.C.</i>	Falls Church, Va.
Johnson, Joseph Levien, B.D.I. ( <i>Iowa State Normal</i> ), <i>Student,</i>	Huxley, Ia.
Jones, Thomas Edward, B.D.I. ( <i>Iowa State Normal</i> ), M.D.I. ( <i>ibid.</i> ), <i>Student,</i>	Cresco, Ia.
Kingsbury, Grace Ethel, <i>Physical Director, The Temple College, Philadelphia, Pa.</i>	Braintree.
Latham, Ethel Louisa, <i>Assistant Physical Director, Dobbs Ferry, N. Y.</i>	Melrose.
Latimer, Robert Lee, A.B. ( <i>Brown Univ.</i> ), <i>Student,</i>	Montville, Conn.
Lentz, Suzanne Mark, S.B. ( <i>Irving Coll.</i> ), <i>Director of Physical Culture, Mt. Aloysius Academy, Cresson, Pa.</i>	Altoona, Pa.
Lowman, Guy S., B.D.I. ( <i>Iowa State Normal</i> ), B.P.E. ( <i>Springfield Training School</i> ), <i>Physical Director, High School,</i>	Brookline.
McCloy, Charles Harold, Ph.B. ( <i>Marietta Coll.</i> ), <i>Physical Director and Instructor in Biology, Marietta College,</i>	Marietta, O.
McManus, Emily, A.M. ( <i>Queen's Univ., Kingston, Can.</i> ), <i>Teacher, Ottawa Collegiate Institute,</i>	Ottawa, Ont.
Mathis, Soflena Estella, <i>Physical Director,</i>	Galesburg, Ill.
Mena, Aurora, <i>Teacher,</i>	Havana, Cuba.
Meyers, Clara Belle, <i>Substitute Teacher, Physical Training, Graded Schools,</i>	Washington, D.C.
Miller, Elizabeth Van Voorhes, <i>Teacher, Normal School,</i>	Lock Haven, Pa.
Morrill, Berton Charles, <i>Coach and Student, Bowdoin College,</i>	Boston.

- Pitman, William Springer, *Athletic Director, Galahad Club, Trinity Church,*  
Newport, R.I.
- Pritchette, Vergil Clayton, PH.B. (*Elon Coll.*),  
Physical Director, *Elon College, N.C.*  
Elon College, N.C.
- Redding, Charlotte Wilmarth, *Student,*  
Amherst.
- Roddy, Mary Ethelda, *Instructor of Physical Training, Indiana University,*  
Bloomington, Ind.
- Ross, Frances Josephine, *Instructor in Gymnastics, Women's Gymnasium, Hamilton Park,*  
Chicago, Ill.
- St. Clair, Margaret, *Student,*  
Philadelphia. Pa.
- St. George, Helen Hatley, *Assistant, Physical Training, Kemper Hall, Kenosha, Wis.*  
Nashotah, Wis.
- Samse, Leroy Perry, *Assistant to Physical Director, Indiana University,*  
Kokomo, Ind.
- Sanders, Elsie, *Assistant in Physical Training, Public School,*  
Washington, D.C.
- Sargent, William Andrew, *Student,*  
Bradford, Vt.
- Sawin, Harriette Fisher, A.B. (*Wellesley Coll.*),  
Student,  
Cambridge.
- Schwind, Arthur F., *Student,*  
Philadelphia, Pa.
- Shepard, Ida Holland, *Teacher of Elocution,*  
Beaumont, Tex.
- Shriner, Elmer, M.E. (*Juniata Coll.*), *Supervisor of Physical Education, Public Schools,*  
Akron, O.
- Smith, Mabel Louise, *Student,*  
Denver, Colo.
- Somers, Jean Margaret, *Teacher of Physical Training, Toronto Normal School,*  
Toronto, Can.
- Swan, Annie Louise Darling, *Physical Director, State Normal School, Mansfield, Pa.*  
Mattapan.
- Sweitzer, Eleanor Phyllis, *Teacher, Public Schools,*  
Chicago, Ill.
- Tracy, Mildred Leavitt, *Instructor, Bernan Macfadden Institute,*  
Hinckley, Me.
- Tuttle, Evva, *Physical Director, Y.W.C.A., Lansing, Mich.*  
Oconomowoc, Wis.
- Viall, Mildred Peck, *Student,*  
Warren, R.I.
- Wert, Florence Adele, *Teacher, Elementary Schools,*  
Philadelphia, Pa.
- White, Frank Warren, M.D. (*Tufts Med. School*),  
Physical Director, *High School, Boston,*  
Arlington.
- Whiting, Lewis Daniel, *Physical Director, Tilton Seminary, Tilton, N.H.*  
Cambridge.
- Williams, Lois Elmer, *Teacher, Alenda Preparatory School, Pittsburg, Pa.*  
Quincy.
- Williams, Mary Edith, A.M. (*Univ. of Illinois*),  
Assistant in *Women's Gymnasium, University of Illinois,*  
Urbana, Ill.



Williamson, Etta Lucile, *Teacher, Gay Street Public School, West Chester, Pa.*  
 Zarfos, Lewis Norman, *Teacher,*

Philadelphia, Pa.  
 Red Lion, Pa.

## PHYSICS.

### ELEMENTARY PHYSICS.

Backus, Florence Erie, A.B. ( <i>Tufts Coll.</i> ),	Tufts College.
Beal, Carleton DeCraatos, <i>Student,</i>	Braintree.
Blake, Harry Alfred, A.B. ( <i>Bates Coll.</i> ), <i>Principal,</i> <i>Abington High School,</i>	Dexter, Me.
Brown, Alice Morehead, <i>Director of Gymnastics and Athletics and Instructor in Physiology, The Misses Shepley School, Bryn Mawr, Pa.</i>	Kendal Green.
Buck, Helen Isabel, A.B. ( <i>Mt. Holyoke Coll.</i> ), <i>Teacher, High School,</i>	Manchester, N.H.
Cameron, Ward Griswold, <i>Student,</i>	Allston.
Campbell, George Parker, A.B. ( <i>Williams Coll.</i> ), <i>Principal, High School,</i>	Marblehead.
Carey, Francis, A.B. ( <i>Brown Univ.</i> ), <i>Principal,</i> <i>High School, Lenox,</i>	Worcester.
Carmichael, George, A.M. ( <i>Wash. and Jeff. Coll.</i> ), <i>Teacher, Prestonsburg Academy, Prestonsburg, Ky.</i>	Pikeville, Ky.
Channell, Ralph Walter, A.B. ( <i>Bates Coll.</i> ), <i>Principal, High School,</i>	Northboro.
Chisholm, William Joseph, A.B. ( <i>Clark Coll.</i> ), <i>Principal, Old Mystic High School, Stonington, Conn.</i>	Revere.
Converse, Ernest Luther, S.B. ( <i>New Hampshire Coll.</i> ), <i>Teacher, Virginia Institute, Bristol, Va.</i>	Reed's Ferry, N.H.
Crowell, Alice Maud, <i>Teacher, Dudley School, Boston,</i>	Somerville.
Davis, Mahala Frances, <i>Teacher,</i>	Cambridge.
Green, George Henry Bartlett, Jr., A.B. ( <i>Amherst Coll.</i> ), <i>Instructor, High School, Athol,</i>	Belchertown.
Holmes, William King, A.B. ( <i>Bates Coll.</i> ), <i>Teacher, High School, New Britain, Conn.</i>	So. Paris, Me.
Liu, Chia Hang, <i>Student,</i>	Tientsin, China.
Miller, George Stewart, A.B. ( <i>Tufts Coll.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher, High School, Concord,</i>	No. Andover.
Regan, John Ward, S.B. ( <i>Massachusetts Inst. of Tech.</i> ), A.M. ( <i>Harvard Univ.</i> ), <i>Assistant, Charlestown High School,</i>	Boston.

- Roche, Frederick von Stade, *Student*, Boston.  
 Roy, Joseph Valere, A.B. (*Laval Univ.*), *Teacher*,  
*Levis College*, Levis College, P.Q., Can.  
 Shreve, Charles Henry, B.A.S. (*Harvard Univ.*),  
*Charge of Science Department, High School*, Paducah, Ky.  
 Vanier, Henri Albert, A.B. (*Laval Univ.*), *Teacher*,  
*St. Joseph's College*, St. Joseph's College, N.B., Can.  
 Wales, Helen Louise, A.B. (*Wellesley Coll.*),  
*Chemist, Maywood, N. J.* Stoughton.  
 Weeks, Nellie Louise, *Student*, Huntington, L.I., N.Y.

## ADVANCED PHYSICS.

- Aiken, James Hawley, S.B. (*Univ. of Vermont*),  
*Teacher, High School*, Saratoga Springs, N.Y.  
 Chang, Hsing Lang, *Student*, Shanghai, China.  
 Chang, Tatsung, *Student*, Kashing, China.  
 Hewlett, Clarence Wilson, B.E. (*Agricultural and*  
*Mechanical Coll., N.C.*), *Instructor, Agric.*  
*and Mech. College*, West Raleigh, N.C.  
 Langworthy, Floyd Merton, A.B. (*Hillsdale Coll.*),  
*Superintendent of Public Schools*, Burr Oak, Mich.  
 Li, Sung Ch'uan, *Student*, Shanghai, China.  
 Merrill, John Bradbury, A.B. (*Colby Coll.*), A.M.  
*(ibid.)*, *Sub-Master, High School*, Woonsocket, R.I.  
 Shackelford, Laura, *Teacher, Public Schools, Wash-*  
*ington, D.C.* Washington, D.C.  
 Stapleton, William Clarke, S.B. (*Dalhousie Univ.*),  
*Principal, High School*, Oxford, N.S.  
 Waite, Horace Stokes, *Student*, Brookline.  
 Washburn, Charles Addison, A.B. (*Bates Coll.*),  
*Sub-Master, Framingham Academy and High*  
*School*, So. Framingham.  
 White, Edmund Gregory, *Student*, Nahant.  
 Winston, Lulie Gaines, S.B. (*Richmond Coll.*),  
*Teacher, State Normal School, Farmville, Va.* Richmond, Va.

## PSYCHOLOGY.

## DESCRIPTIVE.

- Bacon, Albert Reed, *Student*, Bedford.  
 Bell, Richard Dana, *Student*, Somerville.  
 Bogert, Langdon, *Student*, Providence, R.I.  
 Breed, Frederick Stephen, A.M. (*Harvard Univ.*),  
*Principal, Preparatory School of Allegheny*  
*College, Meadville, Pa.* Butler, Pa.

Brock, Arthur, Jr., <i>Student</i> ,	Philadelphia, Pa.
Chandler, John Parker Hale, <i>Student</i> ,	Concord, N.H.
Crawford, Josephine Agnes, <i>Stenographer</i> ,	Boston.
Dana, Otis Holmes, <i>Student</i> ,	Brookline.
Greydon, William Franklin, <i>Student</i> ,	Woburn.
Hamilton, Burton Everett, <i>Student</i> ,	Roxbury.
Harvie, Peter Lyons, <i>Student</i> ,	Everett, Wash.
Liu, Jiu Heng, <i>Student</i> ,	Tientsin, China.
Molloy, Mary Antoinette, <i>Teacher</i> , O. W. Holmes School, Boston,	Randolph.
Mott, Frank Earle, PH.C. ( <i>Massachusetts Coll. of</i> <i>Pharm.</i> ), <i>Student</i> ,	Boston.
Oppen, Lucy von Hiddessen, <i>Student</i> ,	Stoneham.
Reese, Charles Abraham, A.B. ( <i>Brown Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>General Secretary</i> , Newton Theologi- cal Institution, Newton Centre,	Newton Highlands.
Senter, Susie Lucinda, <i>Teacher</i> ,	Cambridge.
Shepard, Oscar Fred, <i>Student</i> ,	Lawrenceville, N.Y.
Stinzing, Clemence Marie, <i>Primary Teacher</i> , Pub- lic School,	Washington, D.C.
Swan, Howard, <i>Author</i> , <i>Teacher</i> ,	Ilford, Essex, Eng.
Taylor, Florence Ethel, <i>Student</i> ,	Olean, N.Y.
Thurlow, Edward Kimball, <i>Student</i> ,	W. Newbury.
White, Edward Noyes, <i>Student</i> ,	Wellesley Hills.
Williams, Gwilym Walter, <i>Head Commercial</i> <i>Teacher</i> , High School,	New Bedford.
Yoder, Bessie Lee, <i>Teacher</i> , Public School,	Washington, D.C.

## APPLIED.

Alexander, Georgia, <i>Supervising Principal</i> , Public School,	Indianapolis, Ind.
Browning, Laura Coleman, S.B. ( <i>New York Univ.</i> ),	Cambridge.
Chao, Tien Lin, <i>Student</i> ,	Tientsin, China.
Christian, Andreas Forest, M.D. ( <i>Norway</i> ), <i>Physi- cian</i> ,	Boston.
Crabbe, John Egerton, A.B. ( <i>Wooster Univ.</i> ), <i>Instructor</i> , Glenville High School,	Cleveland, O.
Crawford, Josephine Agnes, <i>Stenographer</i> ,	Boston.
Farmer, Frank Herbert, <i>Business</i> ,	Waltham.
Hamilton, Burton Everett, <i>Student</i> ,	Roxbury.
Harvie, Peter Lyons, <i>Student</i> ,	Everett, Wash.
Knapp, Alma Eunice, <i>Student</i> ,	Detroit, Mich.
Oppen, Lucy von Hiddessen, <i>Student</i> ,	Stoneham.

Ricker, Charles Sherwood, <i>Student</i> ,	Cambridge.
Ring, Barbara Taylor, M.D. ( <i>Boston Univ. School of Med.</i> ), <i>Physician</i> ,	Arlington Heights.
Sanborn, Alice Taylor, <i>Teacher</i> ,	Boston.
Shepard, Oscar Fred, <i>Student</i> ,	Lawrenceville, N.Y.
Swan, Howard, <i>Author, Teacher</i> ,	Ilford, Essex, Eng.
White, Edward Noyes, <i>Student</i> ,	Wellesley Hills.
Williams, Gwilym Walter, <i>Head Commercial Teacher, High School</i> ,	New Bedford.

## PUBLIC SPEAKING AND READING.

## VOICE DEVELOPMENT.

Almeida, Alvaro Gil de, <i>Business</i> ,	Cambridge.
Bickford, Elizabeth Emma, S.B. ( <i>Massachusetts Inst. of Tech.</i> ), PH.D. ( <i>Freiburg Univ., Germany</i> ), <i>Teacher, High School, Newton</i> ,	Boston.
Bruce, Mary Elizabeth, <i>Teacher, Oral Expression, Oahu College</i> ,	Honolulu, Hawaii.
Cadwell, Elizabeth Marie,	Portland, Ore.
Clarke, Susannah Lowell, A.B. ( <i>Bryn Mawr Coll.</i> ), <i>Teacher, St. Agnes School, Albany, N. Y.</i>	Boston.
Dennis, Bernard Francis,	Niagara Falls, N.Y.
Eliot, Adelaide Genevieve, <i>Student</i> ,	Somerville.
Fulton, Robert Newcomb, <i>Minister</i> ,	Indianapolis, Ind.
Hart, Blanche Christine, <i>Teacher, High School</i> ,	New Brunswick, N.J.
Holt, Samuel, <i>Principal of Designing, Textile School</i> ,	New Bedford.
Lathrop, Clara, <i>Student</i> ,	Worcester.
Lucke, Katherine Eleanor, <i>Teacher, Peabody Conservatory of Music Annex</i> ,	Baltimore, Md.
McGregor, Charles Malcolm, S.B. ( <i>Union Coll.</i> ), <i>Vice-Principal, Owego, N. Y.</i>	Gloversville, N.Y.
Maerker, Grace Elfrieda, A.B. ( <i>Ohio State Univ.</i> ), <i>Teacher, High School</i> ,	Napoleon, O.
Marsh, Miles Eugene, A.B. ( <i>Oberlin Coll.</i> ), <i>Dean of Academy, Berea College</i> ,	Berea, Ky.
Moore, Samuel, A.B. ( <i>Princeton Univ.</i> ), <i>Instructor, University of Kansas, Lawrence, Kan.</i>	Trenton, N.J.
Shirley, Minerva Blodgett, PH.B. ( <i>Boston Univ.</i> ), <i>Teacher, Hitchcock Free Academy</i> ,	Andover, N.H.
Stebbins, Ida Isabel, <i>Teacher, Grammar School</i> ,	Brooklyn, N.Y.

Tressler, Jacob Cloyd, A.B. ( <i>Syracuse Univ.</i> ), Teacher, <i>Potsdam State Normal School</i> ,	Newport, Pa.
Yeh, Ta Ch'ien, <i>Student</i> ,	Kiangsu, China.

## ORAL READING.

Adams, Charlotte Hastings, A.B. ( <i>Radcliffe Coll.</i> ), Teacher, <i>Gilman School for Girls</i> ,	Cambridge.
Bimont, Blanche Jeanne, <i>Instructor, Western High School</i> ,	Washington, D.C.
Bruce, Mary Elizabeth, <i>Teacher, Oral Expression, Oahu College</i> ,	Honolulu, Hawaii.
Cadwell, Elizabeth Marie,	Portland, Ore.
Fineran, Mary Frances, <i>Teacher, Public School, Boston</i> ,	Roxbury.
LeRoy, Emmie Lou, <i>Student</i> ,	Marinette, Wis.
Sears, Seth, <i>Master, Franklin School, Boston</i> ,	Cambridge.
Story, Chester Bradstreet, A.B. ( <i>Tufts Coll.</i> ), Teacher, <i>High School, Hyde Park</i> ,	Uxbridge.
Tressler, Jacob Cloyd, A.B. ( <i>Syracuse Univ.</i> ), Teacher, <i>State Normal School, Potsdam, N. Y.</i>	Newport, Pa.

## PLATFORM SPEAKING.

Butterworth, William Walton, M.D. ( <i>Tulane Univ.</i> ), Associate Professor, <i>Diseases of Children, Tulane University</i> ,	New Orleans, La.
Cook, Sherwin Lawrence, <i>Law Student</i> ,	Roxbury.
Farmer, Frank Herbert, <i>Business</i> ,	Waltham.
Fulton, Robert Newcomb, <i>Minister</i> ,	Indianapolis, Ind.
Ganley, William, <i>Pastor, Congregational Church</i> ,	Salem, N. H.
Holt, Samuel, <i>Principal of Designing, Textile School</i> ,	New Bedford.
Hutchins, William James, A.B. ( <i>Yale Univ.</i> ), <i>Professor, Oberlin Seminary</i> ,	Oberlin, O.
Lathrop, Clara, A.B. ( <i>Oberlin Coll.</i> ), <i>Student</i> ,	Worcester.
Orr, Thaddeus Browne, <i>Principal, Training School, Adairville, Ky.</i>	Lewisburg, Tenn.
Ross, Arthur Basil, A.B. ( <i>McGill Univ.</i> ), <i>Clergyman</i> ,	W. Glover, Vt.
Rutherford, Minnie Ursule, A.B. ( <i>Sullins Coll.</i> ), <i>Private Teacher</i> ,	Magazine, Ark.
Schwartz, Louis David, <i>Student</i> ,	Brooklyn, N. Y.
Story, Chester Bradstreet, A.B. ( <i>Tufts Coll.</i> ), Teacher, <i>High School, Hyde Park</i> ,	Uxbridge.



Wolf, Horace Joseph, A.B. ( <i>Univ. of Cincinnati</i> ), <i>Student</i> ,	Cincinnati, O.
Woodbury, Charles Talbot, A.B. ( <i>Dartmouth Coll.</i> ), <i>Principal, High School, Fitchburg</i> ,	Salem, N.H.

## READING OF ENGLISH CLASSICS.

Adams, Charlotte Hastings, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher, Gilman School for Girls</i> ,	Cambridge.
Allen, Katharine Myers,	Dorchester.
Andrews, Edith Mabel, <i>Teacher, Gilbert E. Hood</i> <i>School</i> ,	Lawrence.
Armistead, Georgie Graham, <i>Teacher, Public School</i> ,	Memphis, Tenn.
Atherton, Lily Bell, <i>Master's Assistant, Dearborn</i> <i>School, Boston</i> ,	Medford.
Barnitz, Wirt Whitcomb, <i>Student</i> ,	Hanover, Pa.
Bayley, Anna Florence, <i>Teacher, Lewis Grammar</i> <i>School</i> ,	Roxbury.
Bowman, Jessie McMahon, <i>Teacher, Public School</i> , <i>No. 29</i> ,	New York, N.Y.
Bushnell, Emma Lyman, A.B. ( <i>Rockford Coll.</i> ), <i>Teacher, Burr and Burton Seminary, Man-</i> <i>chester, Vt.</i>	Beloit, Wis.
Carpenter, Myrtle Luella, <i>Teacher, State Normal</i> <i>School, Platteville, Wis.</i>	Chicago, Ill.
Chambers, John Milton, A.B. ( <i>Northwestern Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Professor, Franklin and Marshall</i> <i>College</i> ,	Lancaster, Pa.
Clarke, Martha Fuller,	Winsted, Conn
Cook, Sherwin Lawrence, <i>Law Student</i> ,	Roxbury.
Corbett, Anna Marie, PH.B. ( <i>Univ. of Chicago</i> ), <i>Teacher, High School</i> ,	Barberton, O.
Cox, Laura Spencer, <i>Teacher, West School</i> ,	Malden.
Dunlap, Joseph Samuel, TH.M. ( <i>Louisville Baptist</i> <i>Seminary</i> ), <i>Baptist Minister</i> ,	Cambridge.
Eliot, Adelaide Genevieve, <i>Student</i> ,	Somerville.
Farmer, James William, A.B. ( <i>Emory Coll.</i> ), <i>Prin-</i> <i>cipal, Louisville Academy</i> ,	Louisville, Ga.
Fineran, Mary Frances, <i>Teacher, Public School</i> , <i>Boston</i> ,	Roxbury.
Gruss, Pauline Froelich, <i>Teacher, Public Schools</i> ,	Baltimore, Md.
Hayes, George Lewis, A.B. ( <i>Colgate Univ.</i> ), <i>Assis-</i> <i>tant Principal, Public School</i> ,	Indianapolis, Ind.

Lamprey, Leila Matilda, <i>Principal, Gilbert E. Hood School,</i>	Lawrence.
LeRoy, Emmie Lou, <i>Student,</i>	Marinette, Wis.
Lucke, Katherine Eleanor, <i>Teacher, Peabody Conservatory of Music Annex,</i>	Baltimore, Md.
O'Neil, Alice, <i>Master's Assistant, Elementary School,</i>	Dorchester.
Orr, Marie Hester, <i>Teacher,</i>	Pittsburg, Pa.
Peake, Ellen Frances,	Oshkosh, Wis.
Peake, Ellen Frances Palmer, A.B. ( <i>Univ. of New Brunswick</i> ), <i>Teacher, State Normal School,</i>	Oshkosh, Wis.
Peake, Marion Palmer, A.B. ( <i>Univ. of New Brunswick</i> ), <i>Teacher, State Normal School, Stevens Point, Wis.</i>	Oshkosh, Wis.
Pittis, Mary Olive, S.B. ( <i>Valparaiso Univ.</i> ), <i>Teacher, South High School,</i>	Cleveland, O.
Roche, Sarah Lucy, <i>Teacher, Public Schools,</i>	Baltimore, Md.
Rogers, Bertha May, <i>Teacher, Hopedale,</i>	Somerville.
Ross, Arthur Basil, A.B. ( <i>McGill Univ.</i> ), <i>Clergyman,</i>	W. Glover, Vt.
Rowell, Margaret Isabelle, A.M. ( <i>Grove City Coll.</i> ), <i>Principal, New Richmond High School,</i>	Girard, Pa.
Sawtelle, Pauline Coolidge, <i>Teacher, West School,</i>	Malden.
Story, Chester Bradstreet, A.B. ( <i>Tufts Coll.</i> ), <i>Teacher, High School, Hyde Park,</i>	Uxbridge.
Treffinger, Jane, <i>Teacher, Public Schools,</i>	Pittsburg, Pa.
Tressler, Jacob Cloyd, A.B. ( <i>Syracuse Univ.</i> ), <i>Teacher, State Normal School, Potsdam, N. Y.</i>	Newport, Pa.
Tressler, Samuel Martin, <i>Supervising Principal,</i>	Washington, N. J.
Wallace, Joseph Ambrose, A.B. ( <i>Dartmouth Coll.</i> ), <i>Instructor, Crosby High School, Waterbury, Conn.</i>	Medway.
Williamson, Edith Elvira, <i>Teacher, Assistant Principal, Larimer School,</i>	Pittsburg, Pa.
Young, Mabel, A.B. ( <i>Grove City Coll.</i> ), <i>Teacher, Grove City College,</i>	Grove City, Pa.

### SHOPWORK.\*

#### ENGINEERING 10a.

Allen, Harrison S., A.B. ( <i>Colby Coll.</i> ), A.M. ( <i>Tufts Coll.</i> ), <i>Head Science Teacher, Crosby High School, Waterbury, Conn.</i>	Vassalboro, Me.
French, Arthur W., <i>Instructor, Manual Training,</i>	Manchester, N.H.

\* See note (†) on page 184.

## ENGINEERING 10b.

- Allen, Harrison S., A.B. (*Colby Coll.*), A.M. (*Tufts Coll.*), *Head Science Teacher, Crosby High School, Waterbury, Conn.* Vassalboro, Me.  
 French, Arthur W., *Instructor, Manual Training,* Manchester, N.H.

## ENGINEERING 10c.

- Allen, Harrison S., A.B. (*Colby Coll.*), A.M. (*Tufts Coll.*), *Head Science Teacher, Crosby High School, Waterbury, Conn.* Vassalboro, Me.  
 Brown, Everett Louis, *Instructor, State College, Dover, Del.* Washington, D.C.  
 Elton, Frederic Garfield, *Head Teacher, Manual Training Department, High School,* Brockton.  
 Foster, Cornelia Chase, *Assistant, Manual Training, High School and Grades, Waltham,* Watertown.

## ENGINEERING 10e.

- Allen, Harrison S., A.B. (*Colby Coll.*), A.M. (*Tufts Coll.*), *Head Science Teacher, Crosby High School, Waterbury, Conn.* Vassalboro, Me.  
 Gannon, John F., A.M. (*Holy Cross Coll.*), *Teacher, Classical High School,* Worcester.

## SPANISH.

## ADVANCED SPANISH.

- Condell, Clement Harlow, *Student,* Cambridge.  
 Garceau, Henry Edward, *Student,* Woonsocket, R.I.  
 Grafton, James Edward, A.B. (*Yale Univ.*), *Instructor, Crosby High School, Waterbury, Conn.* Waterbury, Conn.  
 Laigle, Mathilde Louise, BREV. SUP. (*Coll. de Montbéliard, Doubs, France*), *Instructor, Wellesley College,* Wellesley.  
 Mottet, Eva Louise Marguerite, BREV. SUP. (*Coll. de Montbéliard, Doubs, France*), *Instructor, Wellesley College, and Simmons College, Boston,* Wellesley.  
 Rutherford, Minnie Ursule, A.B. (*Sullins Coll.*), *Private Teacher,* Magazine, Ark.

## SURVEYING.

## ENGINEERING 4a.

Arellano, Adolfo Ramirez, <i>Student</i> ,	Havana, Cuba.
Benton, Harry H., <i>Engineer's Assistant</i> ,	No. Adams.
Carter, B. E., <i>Teacher</i> ,	Sharon, Conn.
Dole, Howard H., <i>Student</i> ,	Portland, Me.
Dunlop, Herbert A.,	Washington, D.C.
Findley, Jefferson W., <i>North Georgia Agricultural College</i> ,	Dahlanega, Ga.
Friedberg, Frank H., <i>Business</i> ,	Kansas City, Mo.
Hartt, John Philip, <i>Student</i> ,	Brookline.
Hayes, John Howard, <i>Sales Engineer, Platt Iron Works, Boston</i> ,	Boston.
Sanders, Ralph Arthur Sidney, <i>Surveying Instrument Maker</i> ,	Los Angeles, Cal.
Steele, John Alexander, <i>Student</i> ,	Oberlin, O.
Toussaint, Henry John, <i>Student</i> ,	Benning, D.C.

## ENGINEERING 4d.

Arellano, Adolfo Ramirez, <i>Student</i> ,	Havana, Cuba.
Benton, Harry H., <i>Engineer's Assistant</i> ,	No. Adams.
Dunlop, Herbert A.,	Washington, D.C.
Findley, Jefferson W., <i>North Georgia Agricultural College</i> ,	Dahlanega, Ga.
Friedberg, Frank H., <i>Business</i> ,	Kansas City, Mo.
Toussaint, Henry John, <i>Student</i> ,	Benning, D.C.

\* The following members of the Summer School were enrolled in the Surveying Courses. In addition there were 100 students in the courses who had been registered in some other Department of the University during the preceding academic year.

† The following members of the Summer School were enrolled in the Shopwork Courses. In addition there were 23 students in the courses who had been registered in some other Department of the University during the preceding academic year. (See p. 182.)

## SUMMARY OF REGISTRATION

## ARTS AND SCIENCES:—

Anthropology . . . . .	20
Architecture . . . . .	23
Astronomy . . . . .	3
Botany . . . . .	15
Chemistry . . . . .	34
Education . . . . .	59
English . . . . .	162
Fine Arts . . . . .	68
French . . . . .	7
Geography . . . . .	10
Geology . . . . .	11
German . . . . .	24
Government . . . . .	22
Greek . . . . .	8
History . . . . .	33
Latin . . . . .	29
Mathematics . . . . .	54
Music . . . . .	25
Nature Study . . . . .	12
Philosophy . . . . .	49
Physical Education . . . . .	179
Physics . . . . .	38
Psychology . . . . .	43
Public Speaking, Platform Reading, and Voice Training . . . .	86
Shopwork . . . . .	10
Spanish . . . . .	6
Surveying . . . . .	18

1,048

Deduct for names inserted more than once . . . . . 239

\*809

THEOLOGY: . . . . .	103
MEDICINE . . . . .	194
DENTISTRY . . . . .	20

1,126

\* This does not include 123 regular college students registered in the Summer Courses in Engineering and Shopwork.



## SUGGESTIONS TO STUDENTS.

*Classes.*—Instructors will meet their classes at 3 or 4 P.M. on Wednesday, July 1, for consultations, announcements, and for the introductory lecture, in rooms to be designated on the bulletin boards. Every student is advised to reach Cambridge before 12 M. on the opening day, so as to be able to register at the office of the Summer School and to attend the first class meeting.

*Boston and Cambridge.*—Practically all passengers for Cambridge, whether by steamer or by rail, must purchase tickets and get baggage checked to one of the railway stations named below in Boston, whence they can proceed to Harvard Square, Cambridge, by electric trolley-car or by cab.

*Boston Railway Stations.*—Passengers reaching Boston over the lines of the *Boston and Maine railway* arrive at the *North Station*. Passengers arriving in Boston over the lines of the *Boston and Albany railway* may get off either at the *Huntington Avenue Station* or at the *South Station*; and those over the lines of the *New York, New Haven and Hartford railway* (except those over the Plymouth Division and some of the lines of the Midland Division, which go to the South Station only) may get off either at the *Back Bay Station* or at the *South Station*. The Huntington Avenue and the Back Bay Stations are placed more conveniently than the South Station for passengers to Cambridge. Passengers arriving in Boston by the *Fall River Boat train* may get off either at the *Back Bay* or at the *South Station*.

*North Station to Cambridge.*—Passengers arriving at the North Station may take the trolley car for Harvard Square in front of the Station, or may take a south-bound elevated train and transfer at Park Street, in the subway, to any Harvard Square electric car.

*South Station to Cambridge.*—A trolley car for Harvard Square passes this Station at irregular intervals of about fifteen minutes. A better route is *via* a north-bound elevated train bound for the subway, transferring to a Harvard Square electric car at the Park Street Station.

*Huntington Avenue and Back Bay Stations to Cambridge.* — Passengers who get off at the Huntington Avenue or at the Back Bay Station may walk through Dartmouth Street to Copley Square, and there take an outward-bound trolley car for Harvard Square at the New Old South Church.

*Wharves to Cambridge.* — Passengers reaching Boston by steamer from Savannah, Norfolk, Baltimore, Philadelphia, Maine, or the Provinces, will land at one of the wharves along Atlantic Avenue in Boston; and are advised to take a *north-bound elevated train on Atlantic Avenue for the Subway* and transfer at Park Street Station to any trolley car for Harvard Square.

*Baggage Transfer to Cambridge.* — Passengers by rail will ordinarily find on the train an agent of the Armstrong Transfer Company, with whom arrangements may be made to deliver baggage in Cambridge. If no Cambridge address has been fixed in advance the agent will arrange to convey baggage to the office of the Transfer Company at 11 Brattle Street, Cambridge. As soon as the Cambridge address has been decided the Company will, on notice to their Cambridge office, deliver the baggage at the house without additional charge. If no agent is seen on the train the student may find offices of this Company at the railway stations, and usually also at the wharves. The teams leave the Boston stations about 9 A.M., 1 P.M., 4 P.M. and 6.30 P.M.; and deliver baggage in Cambridge about two hours after leaving the Boston station.

If the student prefers he may leave his baggage at the Boston station until he reaches Cambridge. He may then arrange, either with the Armstrong Transfer Company, 11 Brattle Street, or Anderson's Baggage Express, 28 Boylston Street, or Sawin's Express, 14 Boylston Street, for the delivery of his baggage at any address in Cambridge.

---

Further information will be furnished on application to the Chairman of the Summer School, Professor J. L. LOVE, 4 Lawrence Hall, Cambridge, Mass.

## LIST OF BOARDING AND LODGING HOUSES.

Prices named are per week unless otherwise indicated. Rooms and suites are furnished. The price includes light and the ordinary care of the room. Some of the single rooms, and many of the suites, may be occupied by two persons. The accommodations for both board and rooms are ample. Arrangements can be made very readily and conveniently after reaching Cambridge.

Students are advised not to engage rooms before seeing them; also to have a clear understanding with the landlord as to terms and the length of time for which accommodations are engaged.

It is ordinarily understood that rooms or board are taken for the entire six weeks of the Summer School, ending August 12. In case a shorter time is desired, for any reason, the contract should be explicit on this point; otherwise, if the student wishes to make a change, or to leave Cambridge before August 12, difficulties may arise in giving up the accommodations first engaged.

The Chairman of the Summer School may be consulted about locations, etc.

No rooms are available in the College dormitories.

### BOARD AND ROOMS

STREET	NAME	SINGLE ROOMS		SUITES		PRICES OF TABLE BOARD	NUMBER OF TABLE BOARDERS ACCOMMODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites		
30 Ash St.	Mrs. E. J. McNeil	1	\$1.50	—	—	\$4.00	6
13 Avon St.	Mrs. T. W. Paine	2	2.50-3.00	—	—	5.00	—
62 Brattle St.	Mrs. S. E. Clifford	3	2.50-5.00	2	\$7.00	7.00	50
400 Broadway	Mrs. H. E. Lombard	5	2.00-up	—	—	6.00	30
1588 Cambridge St.	Mrs. M. Millner	1	2.00	—	—	4.50	20
1640 " "	Mrs. K. M. James	—	—	5	5.00-10.00	6.00	25
1683 " "	Mrs. H. T. Welsh	4	1.50-3.50	3	—	5.00	30

1697 Cambridge St.	Mrs. F. LaFleur	5	1.00-3.00	1	3.50	5.00	10
1707 " "	Mrs. T. F. O'Neil	6	1.00-2.00	1	3.00	4.50	10
1709 " "	Mrs. J. W. Ousler	2	1.00-2.00	2	2.50-4.00	5.00	15
1716 " "	Mrs. F. C. Becker	2	2.00	3	3.00-4.00	5.00	—
4 Carver St.	Mrs. W. H. Rice	3	2.00	2	5.00-10.00	6.00	12
82 Dana St.	Mrs. C. Crowley	3	3.00	—	—	5.00	6
53 Dunster St.	Miss M. E. Dudley	5	1.00-3.00	7	3.50	4.50	10
12 Eliot St.	Mrs. M. J. Packard	10	1.50-3.00	3	—	4.00	15
16 " "	Mrs. T. F. Burns	—	2.00	—	—	4.50	30
100 Ellery St.	Mrs. T. H. Duhart	3	1.50-3.00	—	—	5.00	8
6 Everett St.	Miss F. D. Gage	6	2.00-4.00	—	—	6.00	60
22 Farwell Place	Miss B. Kaatz	2	1.00	—	—	4.00	15
11 Felton St.	Mrs. A. M. Davidson	—	—	—	—	4.00	10
1 Forest Park	Mrs. E. W. Reddin	6	2.50-4.00	2	5.00-7.00	5.00	25
9 Forest St.	Miss K. Gass	3	4.00	—	—	5.00	25
42 Garden St.	Miss E. I. Odiorne	6	6.00	2	6.50	6.00	12
80 Garfield St.	Mrs. R. S. Clay	3	2.00-3.00	—	—	5.00	10
105 Hammond St.	Mrs. J. A. Crichton	2	2.50	—	—	5.00	2
102 Hancock St.	Mrs. C. H. Bowler	—	—	—	—	4.00	15
360 Harvard St.	Mrs. G. H. Hamilton	14	2.00-5.00	1	5.00	5.00	35
375 " "	Mrs. M. Moulton	7	1.50-4.00	—	—	5.00	25
391 " "	Mrs. S. L. Peaslee	2	3.00	—	—	5.00	—
17 Hilliard St.	Mrs. W. A. Mower	2	1.50-3.00	—	—	5.50	10
18 " "	Mrs. S. A. Mackenzie	4	2.00-4.00	—	—	4.00	10
28 Inman St.	Mrs. G. D. Bourcy	4	2.50	2	6.00	5.00	—
37 " "	Mrs. M. E. Bunce	6	1.25-2.50	—	—	4.50	25
7 Irving Ter.	Mrs. C. Crawford	3	2.50	—	—	5.00	12
64 Kirkland St.	Mrs. A. P. Hamlin	6	2.00-3.00	1	4.00	5.00	10
12 Mason St.	Miss S. S. Dillingham	2	3.50	—	—	6.00	4
1000 Massachusetts Ave.	Mrs. O. H. Fellows	3	2.00-3.00	—	—	5.00	70
1033 " "	Mrs. J. J. Connell	6	1.50-4.00	—	—	5.00	20
1114 " "	Mrs. E. R. Kiner	2	1.50-2.00	—	—	4.50	10

STREET	NAME	SINGLE ROOMS		SUITES		PRICES OF TABLE BOARD	NUMBER OF TABLE BOARDERS ACCOMMODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites		
30 Mellen St.	Miss E. W. Folsom	4	1.25-2.75	—	—	4.25	4
123 Mt. Auburn St.	Mrs. H. G. Abraham	—	—	—	—	6.00	8
59 Museum St.	Mrs. E. Cauton	5	2.00-2.50	—	—	4.00	12
16 Oxford St.	Mr. S. E. Hutchins	6	2.00-3.50	8	4.50-7.00	5.00	70
68 " "	Mrs. A. M. Moore	3	2.00-3.00	—	—	5.00	3
76 " "	Mrs. E. L. Getchell	4	3.00-5.00	2	8.00-10.00	6.00	—
63 Prentiss St.	Mrs. C. A. King	8	1.25-2.00	—	—	4.50	75
10 Remington St.	Mrs. E. S. Evans	10	2.00-5.00	4	5.00-9.00	5.50	30
5 Riverview Ave.	Mrs. T. Brewington	2	2.00	—	—	4.50	4
11 Shepard St.	Mrs. A. J. Brown	3	2.00	—	—	5.50	18
32 " "	Mrs. J. F. Alderman	2	2.75-3.00	—	—	5.25	6
36 " "	Mrs. H. D. Wright	4	2.50-3.75	—	—	5.00	8
4 Story St.	Miss G. Clark	6	1.50-3.50	2	5.00-6.00	5.00	20
18 " "	Mrs. W. Ashness	7	2.00-3.00	—	—	4.00	24
20 Trowbridge St.	Mrs. E. J. Angell	6	1.50-2.50	2	6.00	5.00	40
33 " "	Mrs. E. B. Eddy	2	2.50	1	—	5.00	10
7 Wendell St.	Mrs. J. C. Starbuck	7	2.50-5.00	—	—	6.00	12
17 " "	Mrs. J. D. Hunt	3	1.50-3.00	1	5.00	5.00	10

*At many of the above named places arrangements can be made for single meals at the following prices:—*

1. For breakfasts, 20 cents to 35 cents each, or \$1.30 to \$2.10 per week.
2. For luncheons, 20 cents to 35 cents each, or \$1.30 to \$2.10 per week.
3. For dinners, 30 cents to 60 cents each, or \$2.00 to \$3.50 per week.

Table board may be obtained *à la carte* at the several cafés and restaurants at Harvard Square, near the College grounds, where hundreds may be accommodated.



## ROOMS WITH BREAKFASTS OR LUNCHEONS

STREET	NAME	SINGLE ROOMS		SUITES		PRICES OF SINGLE MEALS	PRICES BY THE WEEK FOR ONE MEAL A DAY
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites		
117 Avon Hill St.	Mrs. E. D. Fellows	3	\$3.00	—	—	—	\$1.75
20 Banks St.	Mrs. A. H. Jewell (Colored)	3	2.00-3.00	—	—	—	2.00
42 Bowdoin St.	Mrs. E. L. Wilson	3	1.50-2.75	—	—	—	1.50
1524 Cambridge St.	Mrs. M. S. Browne	3	2.50-3.50	1	—	—	1.50
1699 " "	Miss M. E. McAuliffe	5	1.00-3.00	—	—	—	1.00
21 Ellery St.	Misses Brigham	2	2.00-3.00	—	—	25	—
57 Gorham St.	Mrs. W. H. Andrus	2	2.50	—	—	—	2.65
111 Hammond St.	Mrs. David Eccles	3	1.50-2.50	—	—	—	1.50
162 Hancock St.	Mrs. G. S. Boyer	2	2.00-4.00	—	—	—	1.50
308 Harvard St.	Miss M. Gaffney	5	1.50-4.00	—	—	25	1.75
31 Highland Ave.	Mrs. W. H. Dunton	1	2.50	—	—	25	1.75
31 Inman St.	Mrs. C. A. Gray	3	2.00-4.00	—	—	—	—
42 Kirkland St.	Miss J. E. Brewster	15	1.50-3.00	3	3.00-5.00	25	1.75
65 Langdon St.	Miss F. H. Long	2	3.00-4.00	—	—	—	2.00
1 Leonard Ave.	Mrs. J. D. FitzGerald	2	1.50-2.00	—	—	25	1.50
46 Mt. Auburn St.	Mrs. Martin Brennan	3	1.00-2.00	2	3.00	35	2.00
9 Remington St.	Mrs. H. M. Blake	2	1.00-3.00	—	—	—	1.50
45 Sacramento St.	Mrs. J. D. McGilivray	3	1.50-3.00	1	—	—	1.50
8 Shepard St.	Mrs. L. L. C. Billings	5	1.50-2.50	—	—	—	1.75
24 Shepard St.	Mrs. M. R. P. Hatch	2	2.50	—	—	—	1.50
11 Summer Road	Miss L. E. Hsley	3	2.50-3.00	—	—	20	1.40
23½ Wendell St.	Mrs. A. Elder	5	—	—	—	—	2.00
49 " "	Mrs. B. F. Maricle	6	1.25-3.00	—	—	—	1.25
51 " "	Mrs. M. D. Billings	6	1.75-3.00	2	4.00	—	1.75

## ROOMS ONLY

STREET	NAME	SINGLE ROOMS		SUITES		NUMBER OF LODGERS ACCOM- MODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites	
16 Ash St.	Miss C. J. Carroll	3	\$1.50-3.50	1	\$3.50	5
3 Avon St.	Mrs. G. D. Wildes	2	2.00-3.00	—	—	—
44 " "	Mrs. C. A. Ricker	2	2.50	—	—	—
22 Batavia St., Boston	Mrs. L. Smith	6	2.00-6.00	—	—	12
12 Bow St.	Mrs. J. J. Ferguson	2	2.00-3.00	1	4.00	4
44 Brattle St.	Mrs. L. J. Willey	5	5.00	4	5.00	10
57 " "	Mrs. M. L. Miles	1	2.50-3.00	2	4.00-5.00	5
409 Broadway	Mrs. Catherine Holy	2	1.25	—	—	—
413 " "	Mrs. M. A. Briggs	7	1.25-3.00	—	—	9
417 " "	Mrs. J. L. Fox	5	1.25-3.00	—	—	6
467 " "	Mrs. J. Tyler	6	1.50-3.00	2	—	9
471 " "	Mrs. S. E. Allyn	5	2.00-4.00	—	—	9
1578 Cambridge St.	Miss Frances Davis	3	1.25-3.00	—	—	—
1673 " "	Mrs. G. G. Averill	5	2.00-3.00	—	—	5
1686 " "	Mrs. I. R. Snow	2	2.50	2	3.50	—
1727 " "	Mrs. W. H. Taunton	8	1.50-3.50	6	2.50-5.00	—
1734 " "	Mrs. E. F. Hickey	2	2.00-2.50	4	3.00-4.00	10
1750 " "	Mrs. J. B. Carter	9	1.50-2.50	5	2.50-8.50	30
46 Dana St.	Mrs. O. V. Litchfield	2	3.00-3.50	—	—	3
69 " "	Mr. T. P. MacLarnie	6	2.00-5.00	—	—	—
4 DeWolfe St.	Mrs. M. J. Hannigan	3	1.50	1	2.50	—
9 " "	Miss E. J. D. Kennard	5	1.75-2.00	1	3.75	—
15 Ellery St.	Miss M. P. Blair	5	2.00-4.00	2	—	6
18 " "	Mrs. M. E. Pierce	2	2.00	—	—	2
61 " "	Mrs. J. R. Flewelling	2	2.50-3.00	1	5.00	—

19 Ellsworth Ave.	Mrs. D. L. Watson	4	1.00-3.00	1	3.50	—
5 Everett St.	Mrs. W. Gay	4	2.00-4.00	—	—	—
31 “	Mrs. J. Culhane	6	1.50-3.00	—	—	10
10 Farwell Place	Mrs. W. S. Randall	3	1.50-2.50	—	—	3
6 Felton St.	Mrs. G. C. Buckland	2	1.75	1	3.50	4
9 “	Mrs. W. A. Little	3	2.00-2.50	—	—	—
50 Frost St.	Mrs. G. H. Marston	1	2.50-4.00	1	6.00	—
1 Garden St.	Mrs. M. F. Pinkham	3	6.00	4	—	—
54 “	Misses Parsons	3	1.00-3.00	—	—	3
28 Gorham St.	Mrs. W. R. Lynch	6	2.00	—	—	10
63 “	Mrs. M. A. Eagan	—	—	1	5.00-6.00	—
58 Hammond St.	Mrs. A. E. Wood	3	1.50-2.50	1	5.00	7
65 “	Mrs. L. M. Johnson	9	1.50-3.00	3	4.00-6.00	12
276 Harvard St.	Mrs. D. F. Akerman	3	3.00-5.00	—	—	—
“	Mrs. E. F. Chandler	2	2.50	1	7.00-11.00	4
“	Miss A. P. Barnes	6	2.50	1	3.00	7
364 “	Miss M. L. Bullard	5	1.50-3.50	—	—	5
378 “	Mrs. W. Ivers	4	2.00-3.50	—	—	—
379 “	Mrs. J. Dobinson	3	3.00	2	—	8
381 “	Mrs. A. Babbitt	2	1.00-1.50	—	—	4
48 Highland Ave.	Mrs. J. D. Rose	2	2.00	—	—	—
5 Hilliard Place	Mrs. L. F. West	1	2.50	—	—	2
15 Hilliard St.	Mrs. R. W. Gray	3	2.75-3.75	1	5.00	6
18 “	Mrs. A. R. Jones	2	2.00	—	—	—
18 “	Mrs. E. G. Brandau	6	2.00-up	6	3.00-6.00	12
26 Holyoke St.	Mrs. N. A. Braithwaite	6	1.50-3.00	—	—	6
40 “	Mrs. W. E. Rose	3	1.25-2.25	—	—	—
13 Howland St.	Mrs. D. L. Aspinwall	9	1.50-3.50	2	—	10
26 Hurlbut St.	Mrs. E. F. Arnold	4	1.00-2.50	—	—	—
19 Irving St.	Mrs. G. D. Ford	2	1.25-2.00	—	—	—
26 “	Mrs. C. F. Randall	5	1.75-5.00	3	—	7
32 “	Mrs. E. F. Morse	4	2.00-2.50	2	4.00-5.00	—
48 “	Mrs. W. A. Brewster	4	1.50-2.50	7	1.50-5.00	20

STREET	NAME	SINGLE ROOMS		SUITES		NUMBER OF LODGERS ACCOMMODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites	
58 Kirkland St.	Mrs. F. A. Black	2	2.00-3.00	1	5.00	2
15 Langdon St.	Mrs. H. P. Massure	2	3.00-4.00	2	6.00-7.00	—
46 " "	Mrs. A. Pippette	8	2.00-5.00	—	—	—
51 " "	Mrs. C. L. Robinson	4	—	—	—	7
5-7 Linden St.	Miss M. E. Mooney	10	3.00-5.00	10	7.00-10.00	20
Marie Ave.	Mrs. E. T. McNamara	1	2.50	—	—	—
43 Martin St.	Mrs. C. F. Willard	3	2.50-4.00	1	—	6
1132 Massachusetts Ave.	Miss H. F. Shea	5	1.50-3.00	—	—	6
1134 " "	Miss C. M. Burns	5	1.50-2.00	2	2.50-3.00	10
1172 " "	Mrs. G. E. Clayton	4	2.00	3	4.00	8
1593 " "	Miss N. M. Colby	4	3.00	1	—	—
1599 " "	Mrs. E. S. Spyvee	7	1.50-5.00	3	2.00-7.00	10
1626 " "	Mrs. E. G. Cooley	8	3.00-5.00	2	8.00	16
13 Mellen St.	Mrs. F. G. Allnutt	1	2.00	1	3.00	—
15 " "	Miss Butler	6	1.00-2.00	2	2.00-2.25	10
16 " "	Mrs. G. G. Edwards	4	2.00-3.50	—	—	4
23 " "	Mrs. Margaret Driscoll	8	1.50-2.50	2	2.50-3.00	12
26 " "	Mrs. C. W. Green	1	1.50	2	2.00-2.50	5
29 " "	Mrs. W. P. Husband	6	1.00-2.00	1	2.50	8
34 " "	Mrs. A. M. Whitmore	7	—	—	—	—
37 " "	Mrs. M. A. Peters	6	1.50-4.00	3	4.00-7.00	—
22 Mt. Auburn St.	Miss W. Quinn	3	1.75-3.00	3	4.00	9
26 " "	Mrs. Julia Shugrue	2	2.00	—	—	—
42 " "	Mrs. Martin Brennan	5	1.50-2.00	—	—	5
44 " "	Mrs. K. M. Powell	5	1.50-2.50	—	—	—
127 " "	Mrs. E. R. Chase	2	2.00-5.00	4	2.00-5.00	1 or more
156 " "	Mrs. C. R. Simonds	5	2.00-3.00	—	—	5

122 Orchard St.	Mrs. M. A. Paul	1	3.00	—	—	—	—	—	—
10 Oxford St.	Mrs. M. D. Fairbank	5	3.00-5.00	4	—	—	—	—	14
12 " "	Mrs. S. E. McLellan	4	2.00-3.00	5	—	4.50-6.00	—	—	14
45 " "	Mrs. J. W. Irwin	5	3.00-4.00	2	—	5.00	—	—	8
61 " "	Mrs. F. T. Hazen	6	1.50-3.50	1	—	4.50	—	—	8
63 " "	Miss M. A. Hutchison	4	1.50-3.00	1	—	4.50	—	—	4
67 " "	Mrs. H. Graham	4	1.25-2.00	1	—	3.00	—	—	6
79 " "	Mrs. W. Clark	4	2.00-3.00	—	—	—	—	—	8
16 Parker St.	Mrs. Alex. Shepherd	1	1.50	—	—	—	—	—	—
14 Plympton St.	Mrs. A. F. Hatfield	6	3.00-4.00	2	—	5.00-8.00	—	—	—
40 Prentiss St.	Mrs. E. M. Mitchell	2	2.00	—	—	—	—	—	—
94 Prescott St.	Mrs. G. P. O'Brien	2	1.50-2.50	3	—	3.00-5.00	—	—	8
96 " "	Mrs. Cordelia A. Row	8	2.00-4.00	1	—	4.50	—	—	9
15 Riverview Ave.	Mrs. W. Brent	2	1.50-2.00	—	—	—	—	—	—
14 Sacramento St.	Mrs. A. A. Adams	3	2.00-4.00	—	—	4.00-5.00	—	—	—
26 " "	Mrs. E. Winward	—	—	2	—	—	—	—	—
28 " "	Mrs. H. B. Coles	2	1.50-2.50	1	—	—	—	—	7
41 " "	Mrs. A. M. MacKay	3	2.00	—	—	—	—	—	—
58 " "	Mrs. W. J. Ricker	1	1.50	—	—	—	—	—	—
13 Shepard St.	Miss N. M. Sheehan	3	2.00-3.00	—	—	—	—	—	6
15½ " "	Mrs. F. W. Gaskill	4	2.00	—	—	3.00-4.00	—	—	10
20 " "	Mrs. L. Shackford	3	2.50	—	—	—	—	—	—
22 " "	Mrs. Henry Hayes	2	2.50	—	—	—	—	—	—
2 South St.	Mrs. Ellen Rainey	7	1.50-3.00	—	—	—	—	—	8
6 Story St.	Mrs. W. Heffernan	5	2.00-2.50	—	—	—	—	—	10
8 " "	Mrs. M. H. Cleary	2	1.50-2.50	1	—	3.50	—	—	3
11 " "	Misses Chapman	3	3.00-4.00	1	—	5.00	—	—	—
3 Sumner Road	Mrs. W. H. Taunton	18	2.25-3.00	2	—	6.00	—	—	—
5 " "	" " "	5	1.00-2.25	1	—	3.50	—	—	—
12 " "	Mrs. W. P. Adams	3	3.00	1	—	4.00	—	—	—
14 " "	Mrs. M. W. Williams	4	1.00-2.50	1	—	3.50	—	—	6
15 " "	Mrs. M. M. Mason	4	1.50-3.50	—	—	—	—	—	—



STREET	NAME	SINGLE ROOMS		SUITES		NUMBER OF LODGERS ACCOM- MODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites	
18 Trowbridge St.	Mrs. A. Stokes	1	1.75	3	3.00-5.00	5
36 "	Miss E. F. Hebb	5	1.50-3.00	1	4.50	—
45 "	Mrs. J. P. Harwood	7	2.00-4.00	2	—	10
53 "	Mrs. J. E. Turner	1	3.00	1	5.00	—
230 Upland Road	Mrs. E. Osterlind	2	2.00	—	—	—
37 Walker St.	Mrs. H. T. Clark	2	1.50-2.00	—	—	2
22 Wendell St.	Mrs. E. M. Marshall	3	1.50-3.00	—	—	4
24 "	Miss H. M. Mitchell	3	1.50-4.00	—	—	—
29 "	Mrs. M. E. Burton	4	1.50-3.00	—	—	—
42 "	Mrs. A. J. Nute	2	2.00-3.00	2	4.00-5.00	—
57 "	Mrs. A. F. Hayden	3	1.75-2.00	—	—	5
70 "	Mrs. M. L. Campbell	2	1.50-2.50	—	—	3

## FURNISHED HOUSES AND APARTMENTS

STREET	NAME	NO. OF ROOMS	PRICE PER MONTH	PRICE PER SEASON
8 Ash St. Pl.	Mrs. E. E. Marindin	10	\$35 or 40	—
10 Bellevue Ave.	Mrs. W. R. Mackay	8	—	\$75
1524 Cambridge St.	Mrs. M. S. Browne	Furnished house	35	—
1663 “	S. R. Brown	6	—	—
10½ Concord Ave.	Mrs. Arthur Pope	5	25	—
42 Dana St.	Mrs. W. M. Harding	8	50	—
9 DeWolf	Miss E. J. D. Kennard	4	15	—
15 Ellery St.	Miss M. P. Blair	6	45	—

4 Exeter Park	Miss A. M. Raymond	9 (House)	60	—
50 Frost St.	Mrs. G. H. Marston	5	40	—
276 Harvard St.	Mrs. E. F. Chandler	7	?	—
“ “ “	Miss Josephine Day	4	—	50
361 “ “	Mrs. C. A. Slack	3	35	—
46 Highland Ave.	Mrs. A. W. Ayer	7	30-35	—
5 Howland St.	Mrs. M. S. Embree	House	—	45, 6 weeks
7 “ “	Mrs. J. M. Adams	5	—	35
26 Hurlbut St.	Mrs. D. L. Aspinwall	4 or 8	Reasonable	—
33 Kirkland St.	Mr. E. H. Nichols	14	50	—
15 Langdon St.	Mrs. H. P. Massure	4	—	—
35 Lee St.	Mrs. A. L. Briggs	5	50	—
60 Martin St.	Mrs. M. A. Hutchinson	7	40	—
1132 Massachusetts Ave.	Miss H. F. Shea	5	40	—
1134 “ “	Miss C. M. Burns	House	50	—
1599 “ “	Mrs. E. S. Spyree	7	—	—
12 Mason St.	Miss S. S. Dillingham	9	55	—
15 Mellen St.	Mrs. W. P. Husband	3 to 5	15	—
“ “ “	“ “ “	3 to 5	18	—
16 “ “	Mrs. G. G. Edwards	10	—	—
122 Orchard St.	Mrs. M. A. Paul	4	—	—
49 Oxford St.	Mrs. E. H. Thompson	House	40	—
“ “ “	Mrs. E. L. Getchell	7	40	—
14 Sacramento St.	Mrs. A. A. Adams	—	40	—
45 “ “	Mrs. J. D. McGilivray	7	50	—
“ “ “	“ “ “	3	25	—
59 “ “	Miss S. M. Abbott	4	35	—
49a Trowbridge St.	Miss M. G. Curtis	6	30	—
23 Wendell St.	Mrs. H. Warren Foss	6	35	—
23½ “ “	Mrs. A. Elder	8	35	—
“ “ “	“ “ “	4	25	—
29 “ “	Mrs. C. D. Mayer	6	18-45	—
49 “ “	Mrs. B. F. Maricle	House	45	—

150, July and Aug.  
60, July and Aug.

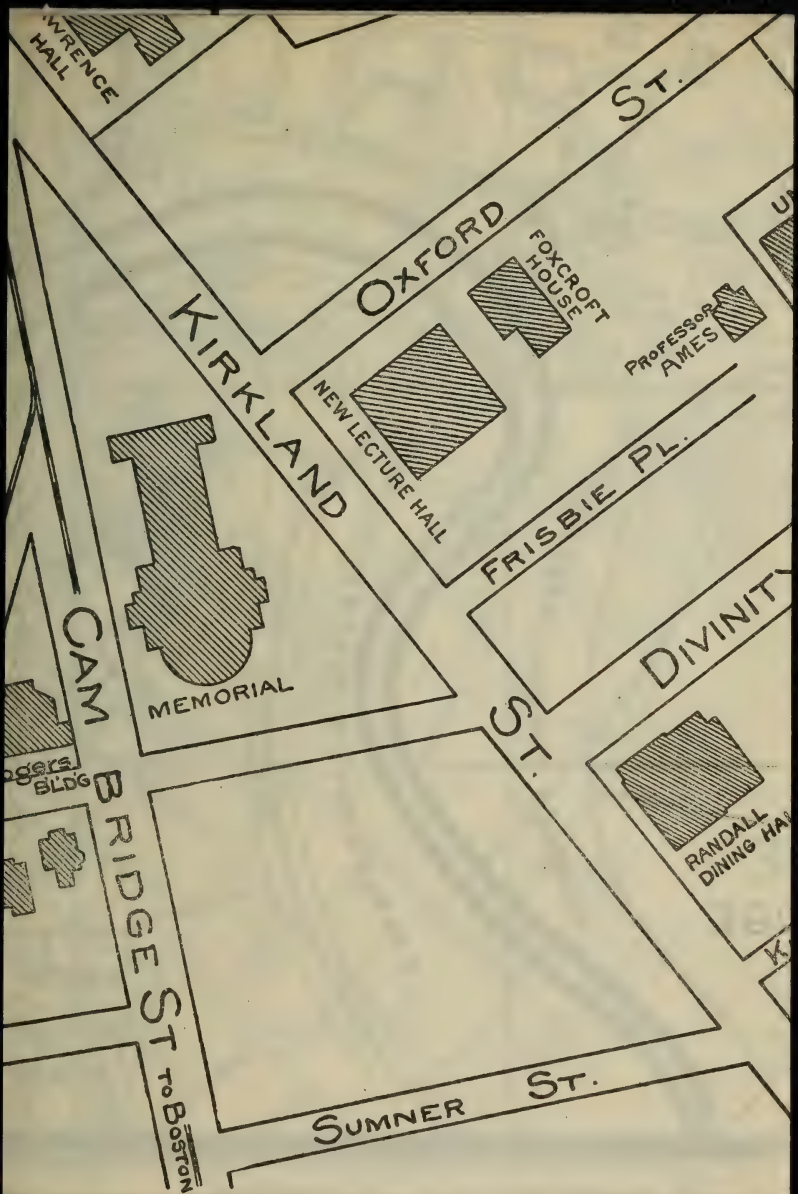
55, 6 weeks













# KEY

1. W. P. Fleming.
2. T. J. Johnson.
3. W. L. Osgood.
4. H. W. Rand.
5. T. S. Marks.
6. G. W. Bates.
7. D. G. Lyman.
8. D. W. Johnson.
9. W. L. Thayer.
10. C. L. Norton.
11. E. L. Mark.
12. R. Thaxter.
13. J. W. Lousig.
14. C. R. Luman.
15. C. A. Adams.
16. R. S. Morrison.
17. O. C. Wendell.
18. B. Perry.
19. B. L. Robinson.
20. H. I. Hughes.
21. S. I. Body.
22. H. L. Warren.
23. W. P. Gurnish.
24. J. L. Woodbridge.
25. J. R. Edmunds.
26. A. Scoble.
27. J. S. Pray.
28. H. von Jagemann.
29. H. C. Brewster.
30. C. H. Grandgent.
31. M. H. Morgan.
32. J. D. Greene.
33. C. R. Sanger.
34. A. A. Howard.
35. J. W. White.
36. C. L. Bouton.
37. E. S. King.
38. J. H. Beale.
39. M. L. Fernald.
40. H. W. Morse.
41. E. Ismert.
42. W. W. Goodwin.
43. E. B. Holt.
44. E. H. Hall.
45. J. H. Rogers.
46. T. W. Richards.
47. J. B. Woodworth.
48. Charles H. Moore.
49. J. G. Hart.
50. H. P. Walcott.
51. F. W. Putnam.
52. M. H. Bailey.
53. A. Sargent.
54. W. H. Tillinghast.
55. R. M. Yerkes.
56. W. C. Lane.
57. F. G. Peabody.
58. J. B. Ames.
59. J. H. Arnold.
60. E. C. Moore.
61. G. F. Moore.
62. W. M. Davis.
63. E. S. Sheldon.
64. W. A. Locke.
65. J. L. Love.
66. J. Royce.
67. W. James.
68. T. N. Carver.
69. C. J. Bullock.
70. R. B. Perry.
71. E. K. Rand.
72. C. B. Gulick.
73. A. C. Potter.
74. R. DeC. Ward.
75. R. T. Jackson.
76. E. C. Jeffrey.
77. J. L. Coolidge.
78. S. Henshaw.
79. H. S. White.
80. J. B. Williams.
81. E. F. Gay.
82. A. E. Kennelly.
83. F. L. Kennedy.
84. J. D. M. Ford.
85. E. Channing.
86. A. O. Norton.
87. H. L. Blackwell.
88. W. A. Neilson.
89. H. L. Smyth.
90. M. Böcher.
91. C. H. C. Wright.
92. C. Palache.
93. L. B. R. Briggs.
94. W. F. Harris.
95. E. A. Darling.
96. D. W. Ross.
97. A. B. Hart.
98. Clifford H. Moore.
99. W. R. Spalding.
100. E. Wambaugh.
101. K. Francke.
102. G. H. Parker.
103. F. N. Robinson.
104. W. H. Schofield.
105. G. L. Goodale.
106. A. Pope.
107. J. D. Brannan.
108. J. Smith.
109. P. H. Hanus.
110. R. W. Willson.
111. C. W. Eliot.
112. W. W. Fenn.
113. J. H. Wright.
114. A. Agassiz.
115. B. S. Hurlbut.
116. W. G. Farlow.
117. S. M. Macvane.
118. H. Munsterberg.
119. S. E. Whiting.
120. W. B. Cannon.
121. W. S. Gram.
122. W. S. Burke.
123. G. P. Baker.

## MAP OF CAMBRIDGE

IN THE VICINITY OF

## HARVARD COLLEGE

1907-08

SCALE

0 500 1000

Distance circles are  $\frac{1}{2}$  mile apart with centre at University Hall.

# KEY

1. W. P. Fleming.
2. T. J. Johnson.
3. W. L. Osgood.
4. H. W. Rand.
5. T. S. Marks.
6. G. W. Bates.
7. D. G. Lyman.
8. D. W. Johnson.
9. W. L. Thayer.
10. C. L. Norton.
11. E. L. Mark.
12. R. Thaxter.
13. J. W. Lousig.
14. C. R. Luman.
15. C. A. Adams.
16. R. S. Morrison.
17. O. C. Wendell.
18. B. Perry.
19. B. L. Robinson.
20. H. I. Hughes.
21. S. I. Body.
22. H. L. Warren.
23. W. P. Gurnish.
24. J. L. Woodbridge.
25. J. R. Edmunds.
26. A. Scoble.
27. J. S. Pray.
28. H. von Jagemann.
29. H. C. Brewster.
30. C. H. Grandgent.
31. M. H. Morgan.
32. J. D. Greene.
33. C. R. Sanger.
34. A. A. Howard.
35. J. W. White.
36. C. L. Bouton.
37. E. S. King.
38. J. H. Beale.
39. M. L. Fernald.
40. H. W. Morse.
41. E. Ismert.
42. W. W. Goodwin.
43. E. B. Holt.
44. E. H. Hall.
45. J. H. Rogers.
46. T. W. Richards.
47. J. B. Woodworth.
48. Charles H. Moore.
49. J. G. Hart.
50. H. P. Walcott.
51. F. W. Putnam.
52. M. H. Bailey.
53. A. Sargent.
54. W. H. Tillinghast.
55. R. M. Yerkes.
56. W. C. Lane.
57. F. G. Peabody.
58. J. B. Ames.
59. J. H. Arnold.
60. E. C. Moore.
61. G. F. Moore.
62. W. M. Davis.
63. E. S. Sheldon.
64. W. A. Locke.
65. J. L. Love.
66. J. Royce.
67. W. James.
68. T. N. Carver.
69. C. J. Bullock.
70. R. B. Perry.
71. E. K. Rand.
72. C. B. Gulick.
73. A. C. Potter.
74. R. DeC. Ward.
75. R. T. Jackson.
76. E. C. Jeffrey.
77. J. L. Coolidge.
78. S. Henshaw.
79. H. S. White.
80. J. B. Williams.
81. E. F. Gay.
82. A. E. Kennelly.
83. F. L. Kennedy.
84. J. D. M. Ford.
85. E. Channing.
86. A. O. Norton.
87. H. L. Blackwell.
88. W. A. Neilson.
89. H. L. Smyth.
90. M. Böcher.
91. C. H. C. Wright.
92. C. Palache.
93. L. B. R. Briggs.
94. W. F. Harris.
95. E. A. Darling.
96. D. W. Ross.
97. A. B. Hart.
98. Clifford H. Moore.
99. W. R. Spalding.
100. E. Wambaugh.
101. K. Francke.
102. G. H. Parker.
103. F. N. Robinson.
104. W. H. Schofield.
105. G. L. Goodale.
106. A. Pope.
107. J. D. Brannan.
108. J. Smith.
109. P. H. Hanus.
110. R. W. Willson.
111. C. W. Eliot.
112. W. W. Fenn.
113. J. H. Wright.
114. A. Agassiz.
115. B. S. Hurlbut.
116. W. G. Farlow.
117. S. M. Macvane.
118. H. Munsterberg.
119. S. E. Whiting.
120. W. B. Cannon.
121. W. S. Gram.
122. W. S. Burke.
123. G. P. Baker.

MOUNT AUBURN

WATERTOWN

CAMBRIDGE  
CEMETERY

CHARLES RIVER RESERVATION

CHARLES RIVER RESERVATION

SOLDIERS  
FIELD

STADIUM

NORTH  
BRIGHTON  
PLAYSTAD

UNIVERSITY BOAT CLUB

LOCKER BLDG.

CAREY

ATHL. BLDG.

BASEBALL DIAMOND

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

STADIUM

MASSACHUSETTS

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

CHARLES RIVER

RESERVATION

Wendell, O. C., 17—Ab.  
White, H. S., 7—Ac.  
White, J. W., 35—Cb.  
Whiting, S. E., 118—Fc.  
Whitmore, J. K., 135—Fd.  
Williams, J. B., 7—G.  
Willson, R. W., 109—De.  
Winter, L. L., 126—Bd.  
Woodworth, J. B., 47—Db.  
Wright, C. H. C., 109—Cc.  
Wright, J. H., 112—Ec.  
Wyman, B., 139—Dd.  
Yerkes, R. M., 51—Db.

Appleton Chapel, 1858.  
Apthorp House, [N].  
Students' Astronom. Lab., 1901.  
Astronom. Observatory, 1843.  
Apley Court, 1897. [I].  
Austin Hall, Law School, 1883.  
Beck Hall, 1876. [T].  
Botanic Garden, 1897.  
Boylston Hall, 1857.  
Brentford Hall, 1900. [U].  
Phillips Brooks House, 1898.  
Claverly Hall, 1893. [L].  
College House, 1832.

Conant Hall, 1894.  
Craigie Hall, 1897. [A].  
Dana Chambers, 1897. [E].  
Dane Hall, 1832.  
Divinity Hall, 1826.  
Divinity Library, 1822.  
Drayton Hall, 1902. [D].  
Dunster Hall, 1897. [G].  
Emerson Hall, 1904.  
Fairfax Hall, [K].  
Felton Hall, 1877.  
Fogg Museum of Art, 1895.  
Foxcroft House, 1888.

Gannett House.  
Germanic Museum, 1902.  
Grays Hall, 1863.  
Gymnasium, 1879.  
Hamden Hall, 1902. [P].  
Harvard Hall, 1765.  
Harvard Union, 1901.  
Holden Chapel, 1744.  
Hollis Hall, 1763.  
Holworthy Hall, 1812.  
Holyoke House, 1870.  
Jefferson Physical Lab., 1884.  
Langdell Hall, Law Sch., 1907.

Lawrence Hall, 1828.  
Library, Gore Hall, 1841.  
Little's Block, 1854. [F].  
Manter Block, 1882. [H].  
Massachusetts Hall, 1720.  
Matthews Hall, 1872.  
Memorial Hall, 1900. [Q].  
Museum of Comp. Zool., 1860.  
New Lecture Hall, 1902.  
Peabody Museum, 1877.  
Perkins Hall, 1894.  
Pierce Hall, 1901.  
Prescott Hall, 1896.

Quincy Hall, 1892. [S].  
Randall Dining Hall, 1898.  
University Hall, 1815.  
University Museum.  
Wadsworth House, 1736.  
Walter Hastings Hall, 1890.  
Ware Hall, 1894. [V].  
Warland Block. [O].  
Sever Hall, 1880.  
Stadium, 1904.  
Stillman Infirmary, 1901.  
Stoughton Hall, 1805.  
Thayer Hall, 1870.

Trinity Hall, 1893. [B].  
University Boat House, 1899.  
University Hall, 1815.  
University Museum.  
Wadsworth House, 1736.  
Walter Hastings Hall, 1890.  
Ware Hall, 1894. [V].  
Warland Block. [O].  
Sever Hall, 1880.  
Stadium, 1904.  
Stillman Infirmary, 1901.  
Stoughton Hall, 1805.  
Thayer Hall, 1870.

123. R. B. Merriman.  
124. A. Sauveur.  
125. C. H. Toy.  
126. I. L. Winter.  
127. J. A. W. Lousig.  
128. J. A. W. Lousig.  
129. J. A. W. Lousig.  
130. B. Wyman.  
131. G. L. Kittredge.  
132. G. H. Palmer.  
133. C. P. Parker.  
134. T. J. Keen.  
135. J. K. Whittemore.

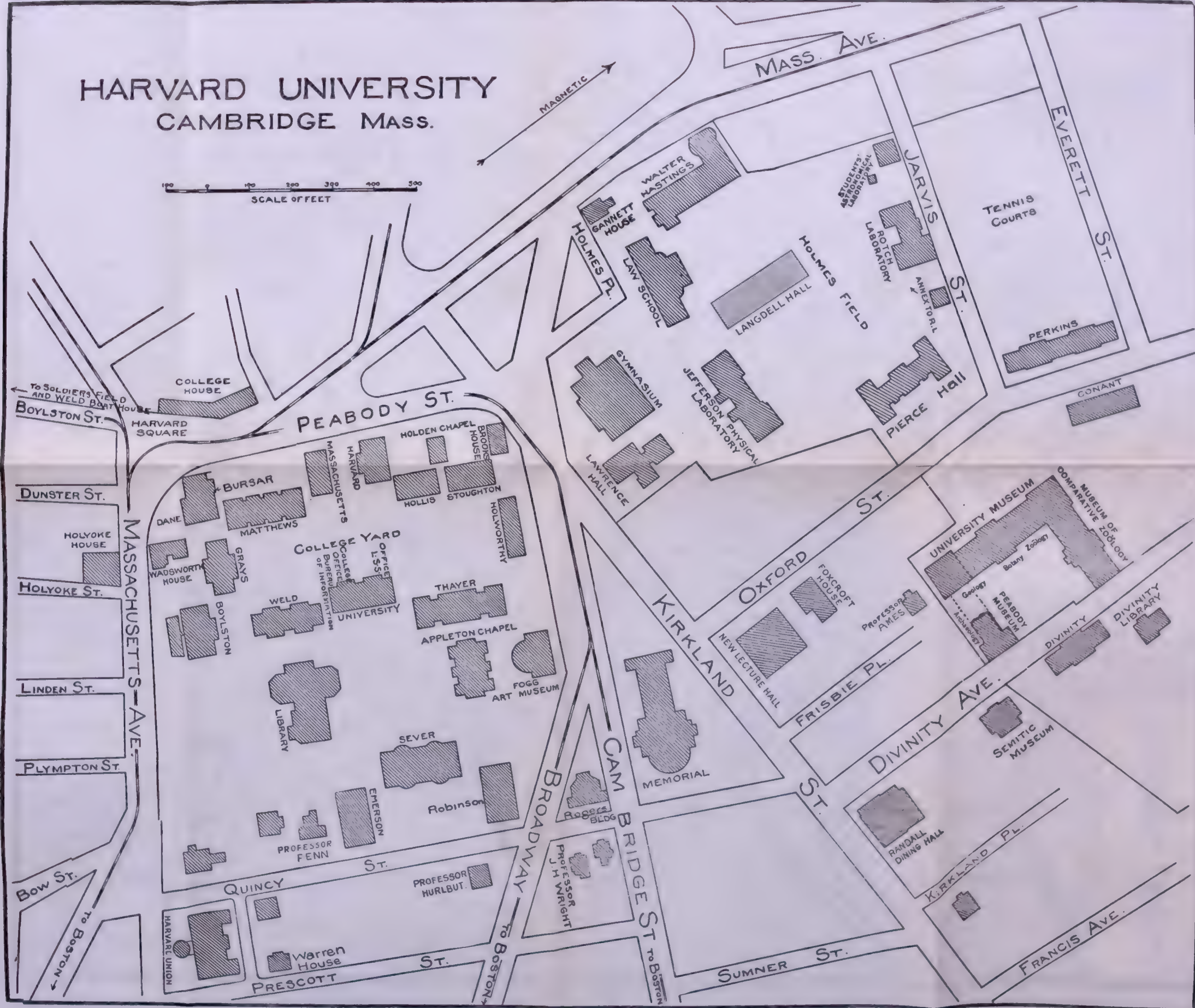
FA Alden Del.

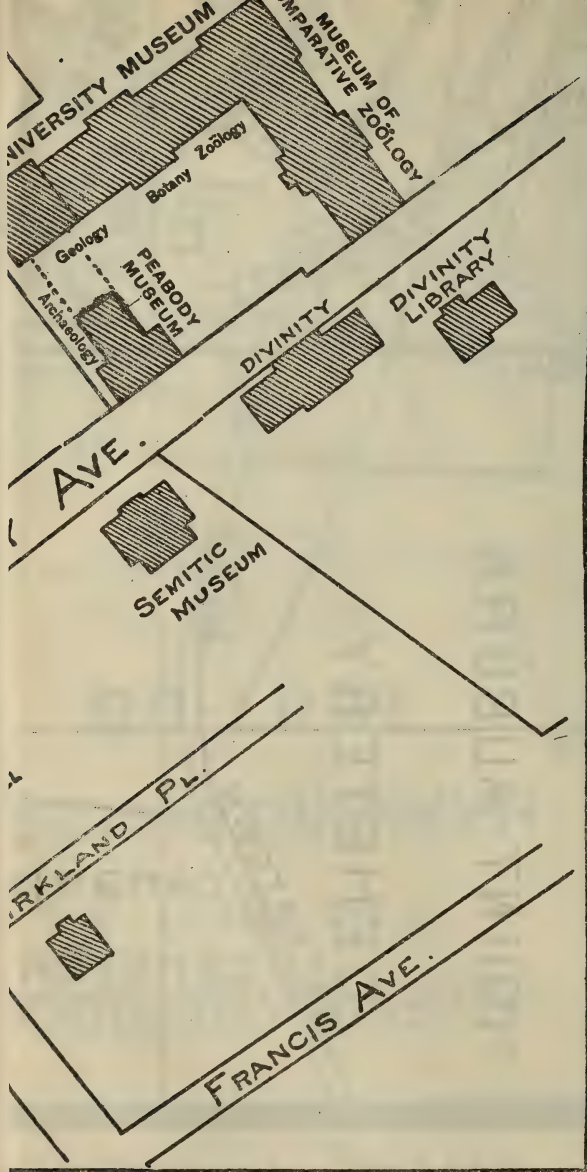


# HARVARD UNIVERSITY CAMBRIDGE MASS.

100 200 300 400 500  
SCALE OF FEET

MAGNETIC







0u7s  
09

# OFFICIAL REGISTER

OF

# HARVARD UNIVERSITY

---

VOLUME VI

APRIL 12, 1909

NUMBER 8

---

THE

SUMMER SCHOOL OF ARTS  
AND SCIENCES

JULY 7—AUGUST 18

1909



Published by Harvard University  
CAMBRIDGE, MASS.



## OFFICIAL REGISTER OF HARVARD UNIVERSITY

*[Entered, March 24, 1905, at Boston, Mass., as second-class matter,  
under Act of Congress of July 16, 1894.]*

---

Issued at Cambridge Station, Boston, Mass., twice a month from October to March inclusive, six times a month from April to September inclusive.

---

These publications include :—

The Annual Reports of the President and of the Treasurer.

The Annual University Catalogue.

The Annual Catalogues of the College and the several Professional Schools of the University; the Announcements of the several Departments; etc., etc.





HARVARD UNIVERSITY: LOCATION WITH REFERENCE TO BOSTON

Harvard University

THE  
SUMMER SCHOOL OF ARTS  
AND SCIENCES

---

*ANNOUNCEMENTS FOR 1909  
CATALOGUE OF STUDENTS IN 1908*

---



CAMBRIDGE, MASS.  
Published by the University  
1909

### SCHEDULE OF LECTURE HOURS

SUBJECT.	PLACE OF MEETING.	Hour.
*Anthropology	Peabody Museum 50	9 A.M.
*Astronomy	Astronomical Laboratory	
*Advanced Botany	University Museum 11	
*Cryptogamic Botany	University Museum 13a	
*Elementary Chemistry	Boylston 9	
*Qualitative Analysis	" 7	
*Ancient Greek Life	Fogg Lecture Room	
*Life and Works of Virgil	Sever 18	
*Principles of Education	Lawrence 7	
*Froebel's Principles of Education	" 12	
*Methods of Teaching History	Harvard 1	
*Methods of Teaching Mathematics	Sever B	
*English Composition A	" 6	
*English Composition B	" 1	
*English Composition C	" 2	
*Argumentative Composition	" 5	
*Anglo-Saxon	" 9	
*Chaucer	" 19	
*Etruscan and Roman Art	" 25	
*German for Teachers	" 17	
*German Dramatists	" 13	
*Greek History	" 7	
*Introduction to Modern Geometry	Sever 8	The * is prefixed to courses ac- cepted for a degree in Harvard University.
*Descriptive Psychology	Emerson 27	
*Elementary Physics	Jefferson 1	
*Advanced Physics	" 25	
*Platform Speaking	New Lecture Hall	
*French Conversation	Sever 23	
*Advanced Spanish	" 19	
*Appreciation of Music	Holden Chapel	9.15 A.M.
Greek for Beginners	Sever 29	10 A.M.
*Drawing and Painting	Robinson Lect. Rm. 1st Floor	
*English History	Harvard 6	
*Ethics	Emerson A	
*Applied Psychology	" 27	
*Platform Reading	Sever 11	10.30 A.M.
*Elementary Botany	Univ. Mus. Nash Lect. Rm.	
*Roman History	Sever 7	
*European History	Harvard 1	
*Elementary Harmony	Holden Chapel	
*Organic Chemistry	Boylston 9	11 A.M.
*Physical Chemistry	" 7	
Latin for Teachers	Sever 18	
*School Administration	Lawrence 1	
*Elementary Schools	" 12	
Admission English	Sever 5	
*Outlines English Literature	" 1	
*Shakspeare	" 6	
18th Century English Literature	" 2	
19th Century English Literature	Emerson D	
*Ancient Art	Fogg Lecture Room	
German Conversation	Sever 17	
*Middle High German	" 13	
*American History	Harvard 6	
*Civil Government	Sever 9	
*Advanced Algebra	" 30	
*Trigonometry	" 31	
*Analytic Geometry	" 8	
*Solid Geometry	" B	
Calculus	" 20	
*Introduction to Philosophy	Emerson A	For other Summer Courses see pages 8-12.
*Voice Training	New Lecture Hall	
*Intermediate French	Sever 19	
*French Romantic Drama	" 23	
Spanish Conversation	" A	
*Advanced Harmony	Holden Chapel	11.45 A.M.
Oral Reading of English Classics	Sever 11	12 M.
*Quantitative Analysis	Boylston 9	2 P.M.
School Music	Holden Chapel	2.30 P.M.



# CONTENTS.

	PAGE
ACADEMIC CREDIT FOR SUMMER COURSES . . . . .	15
ADMISSION TO GRADUATE SCHOOLS . . . . .	19
"    " HARVARD COLLEGE . . . . .	18
"    " RADCLIFFE COLLEGE . . . . .	18
"    " SUMMER SCHOOL . . . . .	13
APARTMENTS AND HOUSES . . . . .	23
AUDITORS IN SUMMER COURSES . . . . .	13, 21
BOARD AND ROOMS . . . . .	22
CERTIFICATES ON SUMMER COURSES . . . . .	14
CLASS-ROOM ATTENDANCE REQUIRED . . . . .	13
COLLEGE ADMISSION SUBJECTS . . . . .	12
COURSES OF STUDY OFFERED . . . . .	8
DEGREES OF A.B. AND S.B. . . . .	18
DEGREES OF A.M., S.M., PH.D., AND S.D. . . . .	19
DRAFTS, ETC., FOR EXPENSES . . . . .	22
EVENING LECTURES, READINGS, AND RECEPTIONS . . . . .	26
EXPENSES . . . . .	22
FEES: TUITION, AUDITOR'S, REGISTRATION . . . . .	21
FINAL EXAMINATIONS . . . . .	14
GRADUATES OF NORMAL SCHOOLS . . . . .	18
HISTORICAL EXCURSIONS . . . . .	26, 96
LABORATORIES . . . . .	29
LIBRARIES . . . . .	27
LIST OF BOARDING AND LODGING HOUSES AND MAP . . . . .	200
LIST OF STUDENTS IN 1908 . . . . .	146
MAIL OF SUMMER STUDENTS . . . . .	24
MUSEUMS . . . . .	28
PAYMENT OF FEES . . . . .	22
PLAN OF WORK . . . . .	13
PROMOTION OF TEACHERS . . . . .	16
PURPOSES OF SCHOOL . . . . .	7
READING ROOMS . . . . .	29
RECREATION . . . . .	26
REDUCED RAILWAY EXPENSES . . . . .	24
REGULATIONS FOR COUNTING COURSES FOR A BACHELOR'S DEGREE IN HARVARD COLLEGE . . . . .	16
SOCIAL AND REST ROOMS . . . . .	29
SUGGESTIONS TO STUDENTS . . . . .	198
SUMMARY OF REGISTRATION . . . . .	197
SUMMER SCHOOL ASSOCIATION . . . . .	30
TEACHERS' ASSOCIATION . . . . .	30
TERM OF SUMMER SCHOOL . . . . .	4
TRAVELING EXPENSES . . . . .	24
TUITION, AUDITOR'S, AND REGISTRATION FEES . . . . .	21

## INTRODUCTORY NOTE

The thirty-ninth session of the Summer Courses of Instruction in Arts and Sciences will open on Wednesday, July 7, and close on Wednesday, August 18, 1909.

The first summer courses in Harvard University were given for teachers of botany in 1871 and 1872 by Professor Asa Gray. Other sciences were then added, — biology in 1873 by Professor Louis Agassiz, chemistry in 1874 by Professor Josiah Parsons Cooke, and geology in 1875 by Professor Nathaniel Southgate Shaler.

Their purpose was to promote good teaching of elementary science in schools, by giving teachers opportunities for laboratory and field work; and their method demanded the teacher's concentrated efforts on one subject for six weeks with a master.

A mode of providing courses of direct profit to teachers in service, of both sexes, had long been a matter of careful experiment at Harvard; especially since 1863, when systematic courses of "University Lectures" had been given for them, each year, at convenient hours in term-time. But not until 1871, when the extension of the summer vacation to thirteen weeks first permitted the method of Professor Gray, was a successful way found to help teachers.

For a long time summer courses were given in science only; but in 1887 other subjects began to be offered, and the number and variety of courses increased steadily thereafter. In 1909 nearly every department of college work is represented.

The purpose of the founders, enlarged in scope, remains the paramount motive of the Summer School; and their method, of tested excellence, abides in all its courses.

No formal examination has ever been required for admission to a summer course; and both men and women are admitted, except to the courses in engineering, geography, and geology.

The experience of many years has demonstrated that six weeks' study in Cambridge in summer does not tax the strength of a teacher in ordinarily good health, and that the work is not only profitable but enjoyable. It has been shown that the Summer Courses are of the highest value (1) to teachers and school officers,

by providing opportunities for fruitful study and stimulative companionship with fellow workers; (2) to college students, by affording a chance to use profitably a part of the long vacation; (3) to others who have leisure for study in summer; (4) to members of the University teaching staff, by bringing them into sympathetic and mutually helpful contact with the best teachers in secondary schools; and also (5) to the University, by enlarging its sphere of service and utilizing its educational foundations, in a holiday period, for the benefit of persons unable to avail themselves of its resources at any other time of year.

The Summer School welcomes, especially, ambitious and capable teachers and school officers who desire to increase their personal efficiency, who seek to qualify themselves for promotion or for a new field of service, and cannot interrupt their work for a school year, as well as those who are planning for a leave of absence from their teaching to pursue systematic studies in a college or university.

## HARVARD UNIVERSITY

CHARLES WILLIAM ELIOT, A.M., LL.D., *President.*

(Until May 19, 1909.)

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., *President.*

(After May 19, 1909.)

---

### COMMITTEE IN CHARGE OF THE SUMMER COURSES OF INSTRUCTION IN ARTS AND SCIENCES

JAMES LEE LOVE, A.M., *Assistant Professor of Mathematics,*  
Chairman.

JOSIAH ROYCE, Ph.D., LL.D., *Professor of the History of Philosophy.*

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and  
Art of Teaching.*

GEORGE WASHINGTON PIERCE, Ph.D., *Assistant Professor of Physics.*

JEREMIAH DENIS MATTHIAS FORD, Ph.D., *Smith Professor of the  
French and Spanish Languages.*

GEORGE HENRY CHASE, Ph.D., *Assistant Professor of Classical  
Archaeology, and Curator of Classical Antiquities.*

---

Office of the Chairman of the Summer School,

(In term-time) 4 Lawrence Hall, Cambridge, Mass.

(In Summer) Massachusetts Hall, Cambridge, Mass.

Office of the Bursar, Mr. CHARLES FRANK MASON, A.B.,

Dane Hall, Cambridge, Mass.

Bursar's Office Hours, 9 A.M. to 1 P.M.

[*See Reduced Railway Fares, page 24*]

## SUMMER SCHOOL OF ARTS AND SCIENCES

---

### OBJECTS OF THE COURSES OF INSTRUCTION

The courses are designed to serve, as fully as possible, the needs of the following groups of men and women:

- I. Teachers, and those preparing to teach, — in elementary, secondary, normal, and technical schools or in colleges and universities, — and school principals, supervisors, and superintendents, who wish to pursue courses for self-improvement and promotion, or for the purpose of offering the work in partial fulfilment of the requirements for a degree in Harvard University or in Radcliffe College (for women) or in some other institution of learning where the work pursued at Harvard may be accepted.
- II. Students in Harvard College or Radcliffe College, or in any other school, college, or university, who may wish to use the long vacation to take courses for which they cannot find a place in their winter schedule of studies.
- III. Teachers who are candidates for admission to colleges, who need one or two subjects for the completion of entrance requirements.
- IV. Artists, botanists, chemists, designers, musicians, physical directors, public speakers, writers, and any other qualified persons who may find the offered courses serviceable.

*Special attention is given to courses for teachers in preparatory schools, treating, from the teachers' point of view, the principal college admission subjects — including English, French, German, Greek, Latin, Spanish, history, mathematics, physics, chemistry, botany, astronomy, civil government, harmony, and counterpoint. (See p. 12.)*



The following ninety-six courses are offered in 1909 : —

*The \* is prefixed to Courses which, under varying conditions, may be accepted for a degree in Harvard University. The general regulations for counting summer courses for a degree are stated herein on pages 16-18; and the special conditions, when such exist, are named in the descriptions of the various courses contained in this pamphlet.*

**Anthropology**, one course :

\*Introductory Course (p. 33). Mr. H. J. SPINDEN.

**Astronomy**, one course :

\*Introductory Course (p. 35). Asst. Professor W. C. BRENKE.

**Botany**, three courses :

\*Introductory Course (p. 36). Assoc. Professor M. A. CHRYSLER.

\*Advanced Course (p. 38). Professor A. B. PLOWMAN.

\*Cryptogamic Botany (p. 39). Mr. H. S. JACKSON.

**Chemistry**, seven courses :

\*Elementary Chemistry (p. 41) ;

\*Quantitative Analysis (p. 43) ;

\*Inorganic Research (p. 45).

Asst. Professor G. P. BAXTER and Dr. GRINNELL JONES.

\*Organic Chemistry (p. 42) ;

\*Qualitative Analysis (p. 43) ;

\*Organic Research (p. 45).

Asst. Professor H. A. TORREY and Mr. J. E. ZANETTI.

\*Physical Chemistry (p. 44). Dr. H. L. FREVERT.

**Classics**, four courses :

Greek for Beginners (p. 46) ;

\*Life of Ancient Greeks (p. 47). Asst. Professor C. B. GULICK.

Latin for Teachers (p. 48). Assoc. Professor W. W. BAKER.

\*Life and Works of Virgil (p. 49). Asst. Professor E. K. RAND.

**Education**, four courses :

\*Principles of Education (p. 52). Professor W. T. FOSTER.

\*School Administration (p. 53). Supt. FRANK E. SPAULDING.

\*Elementary Schools (p. 56) ;

\*Froebel's Philosophy of Education (p. 57). Mr. H. W. HOLMES.

**Engineering**, ten courses : See page 11.

**English, twelve courses :**

- \*Elementary Composition (p. 65). Mr. H. R. SHIPHERD.
- \*Advanced Composition (p. 66);
- \*Outlines of English Literature (p. 70).  
Assoc. Professor A. E. HANCOCK.
- \*Second Advanced Composition (p. 67);  
Eighteenth Century English Literature (p. 72).  
Mr. H. M. RIDEOUT.
- \*Argumentative Composition (p. 68);  
College Admission Requirements in English (p. 68).  
Asst. Professor H. B. HUNTINGTON.
- \*Anglo-Saxon (p. 70). Mr. J. W. RANKIN.
- \*Chaucer (p. 71);
- \*Shakspeare (p. 71). Asst. Professor E. C. PERROW.  
Nineteenth Century English Literature (p. 72);  
Evening Readings from English Literature (p. 26).  
Mr. C. T. COPELAND.

**Fine Arts, six courses :**

- \*Drawing and Painting (p. 73). Dr. D. W. ROSS.
- \*Exercises in Pure Design (p. 74).  
Dr. D. W. ROSS and Mr. E. O. PARKER.
- \*Exercises in Drawing and Painting in Representation (p. 75).  
Dr. D. W. ROSS and Mr. M. MOWER.
- \*Architectural Design (p. 77). Asst. Professor W. L. MOWLL.
- \*The History of Ancient Art (p. 76);
- \*Etruscan and Roman Art (p. 77). Asst. Professor G. H. CHASE.

**Geology and Geography, three courses :**

- \*Field-Work in Geology in the Rocky Mountains (p. 79).  
Asst. Professor G. R. MANSFIELD.
- \*Physiographic Studies in New England or Ohio (p. 80).  
Asst. Professor D. W. JOHNSON.
- \*Advanced Field-Work in Geology (p. 80).  
Professor J. E. WOLFF, Asst. Professor J. B. WOODWORTH,  
and (possibly) Professor W. M. DAVIS.

**German, four courses :**

- \*Intermediate Course in Grammar and Composition and Methods  
of Teaching German (p. 82);
- German Conversation (p. 83). Dr. A. W. BOESCHE.

\*Middle High German (p. 84) ;

\*German Dramatists of the Nineteenth Century (p. 83).

Dr. H. J. WEBER.

**History and Government**, six courses :

\*Ancient Greek History (p. 85) ;

\*Ancient Roman History (p. 87).

Asst. Professor W. S. FERGUSON.

\*European History after A.D. 1500 (p. 88).

Dr. JAMES SULLIVAN.

\*English History from A.D. 1509 to A.D. 1689 (p. 89) ;

\*American History from A.D. 1850 to A.D. 1898 (p. 91).

Professor WILLIAM MACDONALD.

\*Civil Government (p. 92).

Dr. W. E. LUNT.

**Mathematics**, six courses :

\*Advanced Algebra (p. 100). Asst. Professor J. L. LOVE.

\*Plane Trigonometry (p. 101). Asst. Professor W. C. BRENKE.

\*Solid Geometry (p. 100). \* Principal GEORGE W. EVANS.

\*Plane Analytic Geometry (p. 102) ;

\*Introduction to Modern Geometry (p. 103).

Professor M. BÔCHER.

Differential and Integral Calculus (p. 104).

Professor W. F. OSGOOD.

**Methods of Teaching**, two courses :

\*Methods of Teaching History (p. 105). Dr. JAMES SULLIVAN.

\*Methods of Teaching Mathematics (p. 106).

Principal G. W. EVANS.

**Music**, four courses :

\*Elementary Harmony (p. 108) ;

\*Advanced Harmony and Simple Counterpoint (p. 108) ;

\*Appreciation of Music ; Study of Masterpieces (p. 107).

Asst. Professor J. P. MARSHALL.

School Music (p. 109).

Mr. OSBOURNE MCCONATHY.

**Philosophy**, two courses :

\*Ethics for Teachers (p. 111) ;

\*Introduction to Philosophy (p. 110).

Asst. Professor RALPH B. PERRY, Mr. G. C. COX, and Dr.  
H. M. KALLEN.

**Physical Education**, eight courses :

Four Years' Series of Courses in Theory — including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, etc. (p. 112) ; and

Four Years' Series of Courses in Practice — including Swedish Free Movements, Free Exercises, Gymnastic Games, Indian Clubs, Field Athletics, Dancing Steps, Aesthetic Dancing, Corrective Gymnastics, Playground Work, etc. (p. 112).

Dr. D. A. SARGENT, Director.

**Physics**, two courses :

\*Elementary Experimental Physics for Teachers (p. 128).

Messrs. H. C. HAYES and E. L. CHAFFEE.

\*Advanced Experimental Physics (p. 130).

Dr. P. W. BRIDGMAN.

**Psychology**, two courses :

\*Descriptive and Experimental Psychology (p. 133) ;

\*Applied Psychology (p. 134).

Asst. Professor ROBERT M. YERKES and Mr. L. W. COLE.

**Public Speaking and Reading**, four courses :

\*Development of the Voice (p. 137). Mr. B. G. WILLARD.

\*Platform Reading and Discussion (p. 137) ;

\*Platform Speaking (p. 138).

Asst. Professor I. L. WINTER and assistants.

Oral Reading of English Classics (p. 139).

Asst. Professor I. L. WINTER.

**Romance Languages**, five courses :

\*Intermediate French for Teachers (p. 141).

Mr. A. G. H. SPIERS.

French Conversation (p. 142).

Mr. ALPHONSE BRUN.

\*French Romantic Drama (p. 143).

Mr. L. ALLARD.

\*Advanced Spanish Composition and Translation (p. 144).

Dr. J. G. GILL.

Spanish Conversation (p. 145).

Dr. E. HURTADO.

## COURSES IN ENGINEERING

The following regular college courses, given in the summer, are open to qualified men who register in the Summer School. The first six are given at Squam Lake, N.H., and the last four are given in Cambridge. Each course begins on the date given after it.

- \*Plane and Topographical Surveying (p. 60), (*June 24*);
- \*Geodetic Surveying (p. 60), (*July 14*); and
- \*Railroad Engineering (p. 61), (*August 4*).

Asst. Professor H. J. HUGHES, Director.

- \*Elementary Statics (p. 61), (*June 24*);
- \*Elementary Resistance of Materials (p. 62), (*July 14*); and
- \*Elementary Kinematics and Kinetics (p. 62), (*July 14*).

Mr. H. U. RANSOM.

- \*Chipping, Filing, and Fitting (p. 64), (*June 14*);
- \*Blacksmithing (p. 64), (*June 14*);
- \*Pattern Making and Foundry Practice (p. 64), (*July 12*); and
- \*Machine-shop Practice (p. 64), (*July 12*).

Mr. E. R. MARKHAM.

*The attention of teachers interested in courses treating College Admission Subjects, from the point of view of the teacher, is called to the following courses:—*

- Astronomy (p. 35);
- Botany (p. 36);
- Chemistry (p. 41);
- Greek for Beginners (p. 46);
- Latin (p. 48);
- Methods of Teaching History (p. 105);
- Methods of Teaching Mathematics (p. 106);
- English (pp. 65–68);
- German (pp. 82–83);
- History (pp. 85–91);
- Civil Government (p. 92);
- Mathematics (pp. 100–102);
- Music (p. 108);
- Physics (pp. 128–132);
- French (pp. 141–142); and
- Spanish (pp. 143–144).

Detailed descriptions of the several courses of study to be given in 1909 may be found on pages 33–145. These descriptions show briefly the aims and scope of the work, the fees, the hours of meeting of the classes, and the addresses of the Instructors, who invite correspondence with interested persons desiring fuller information on any point connected with the courses they offer.



## ADMISSION TO SUMMER COURSES: PLAN OF WORK

No entrance examination is required for admission to a summer course. The Instructors may be consulted by letter or in person by any one who wishes information about requisite preparation or preliminary reading for the course they are planning to take.

The general plan of work in the summer courses is such that the student may most profitably concentrate all of his efforts on a single course. In nearly all courses this limitation of field is expected. There are a few combinations of two courses which may be advisably taken together under favorable conditions, but in no case should the student attempt to do the required work in more than two courses together.

The right to attend as an Auditor courses given in the Summer School may be secured by any member of the School who has registered for the full work in one course. (See page 21.)

In many of the subjects offered the work is arranged so that the student may pursue a sequence of courses in successive sessions of the School.

## CLASS-ROOM ATTENDANCE REQUIRED

Class-room exercises will be held, generally, on five days of the week for six weeks ; except in Physical Education, whose classes meet in the forenoons on Saturdays also.

There will be a minimum of thirty hours of class-room work in each course.

In many courses there will be from forty to sixty hours of class-room exercises; and in laboratory courses, field courses, and drawing courses, the student will be expected to give from two to five hours a day, in addition to the lecture periods, to work under the direction of the instructors and assistants.

Unless otherwise announced in the description of the course, the first meetings of all classes will be held at 3 or 4 P.M., on Wednesday, July 7. The hours for subsequent daily meetings are announced in the descriptions of the courses contained in this pamphlet. (See Schedule, p. 2.) Necessary changes of hours will be announced on the bulletin boards at the opening of the School, or arranged by the instructor at the first meeting.

*Work will begin promptly on July 7 in all courses announced for this date, and students are urged to be present at the first meeting of the class.*

The rooms in which the several classes are to meet and the hours of meeting will be announced on the bulletin boards at the opening of the School. A printed list of class-rooms showing the hours of daily meetings may be obtained at the Office of the Summer School when the student registers.

### FINAL EXAMINATIONS

In courses that meet for lectures at 9 A.M., the final examinations will be held on

TUESDAY, August 17, at 9 A.M.;

and in courses that meet for lectures at 11 A.M., the final examinations will be held on

WEDNESDAY, August 18, at 9 A.M.

In courses that meet for lectures at other hours than 9 or 11 A.M., the final examinations will be held on August 17 or 18 at hours to be determined by the Instructors after consultation with their classes.

No written examination shall exceed three hours in length.

### CERTIFICATES ON SUMMER COURSES

The Summer School Certificate, — indicating the course pursued, the number of hours of class-room attendance required, also that the same grade of examinations and tests of work demanded in corresponding courses in term-time have been satisfied, and (when the course is accepted for academic credit) showing the amount of credit given for it to students who in other respects satisfy the requirements for a degree in Harvard University, — is awarded to each student who attains a grade of C, or higher, in all the prescribed work of a course including the final examination. The certificate is awarded for each course so completed.

Students are admitted to a summer course whether they are candidates for the certificate or not; and it is generally advisable for a student who wishes to take two courses together to try for

the certificate in only one of them, simply hearing the lectures and taking notes in the other.

A special certificate in Physical Training is awarded to those who complete satisfactorily a four years' series of courses in this subject. A certificate in Physical Training is given each year, also, to students who complete satisfactorily the work of that year. (See pages 125-126.)

## ACADEMIC CREDIT FOR SUMMER COURSES

The greater number of the summer courses are accepted in fulfilment of the requirements for the bachelors' degrees by Harvard College and Radcliffe College. Some of the courses may be accepted in partial fulfilment, also, of the requirements for the masters' degrees by the Graduate School of Arts and Sciences and the Graduate School of Applied Science of Harvard University and by Radcliffe College. (See Degrees, pages 16-21.)

Many of the summer courses, although not directly counted for a master's or a doctor's degree, will be found very serviceable in preparation for a plan of study leading to these degrees.

The courses which are accepted for a degree are indicated herein. The list of accepted courses is published also in the annual announcement of the courses of instruction offered by the Faculty of Arts and Sciences, and in the University Catalogue.

Summer students who have previously been admitted to regular standing in Harvard College or Radcliffe College, or to either of the graduate schools above named, will be credited for each accepted summer course which they complete in conformity with the prescribed conditions, in the same manner as if the course were completed in the regular academic year. (See Regulations, pages 16-18.)

Summer students who have not previously been admitted to one of the above-named colleges or graduate schools, but are admitted after completing an accepted summer course satisfactorily, will be credited at the time of their admission for every accepted summer course so completed, either in satisfaction of entrance requirements or towards a degree. *Teachers and others may thus accumulate by summer work in successive years a considerable part of the requirements for a bachelor's degree in Harvard*

*College or Radcliffe College.* (See Admission, page 18, and Degrees, pages 18-21.)

Summer students who are registered, or who expect to register, in other colleges or universities, may present the Summer School Certificates at such institutions for such academic credit as the several institutions may be willing to allow for the summer course: and they are advised to inquire of the Secretary of the institution where they propose to offer the summer course as to what credit will be allowed them for it.

In nearly all cases a summer course is rated as a "half-course"\* in fulfilment of the requirements for a degree in Harvard University.

The Summer School Certificate is usually accepted for the promotion of teachers, and for the exemption from certain of the examinations required for licenses to teach, in localities where examinations are held for these purposes. Teachers desiring to take summer courses with such ends in view are advised to obtain information from the school officer where they intend to offer the work as to what credit will be allowed them for it.

## REGULATIONS FOR THE COUNTING OF SUMMER COURSES FOR THE BACHELORS' DEGREES BY UNDERGRADUATES IN HARVARD COLLEGE

Summer courses, whether carried on in Cambridge or elsewhere, may be counted in fulfilment of the requirements for degrees under the Faculty of Arts and Sciences, under the following special conditions :† —

1. Any summer course, in order to be so counted, must have been proposed by the department in which it is given, and approved by the Faculty as one of its courses of instruction.

\* The term "half-course" is the unit expressing the amount of work required in a college course which meets three times a week during *half an academic year*. It represents about forty-five one-hour class-room exercises combined with from ninety to one hundred and thirty-five hours of outside work, — or the equivalent in laboratory work.

A "half-course" is from one-eighth to one-tenth of the work of an academic year in Harvard University.

† *These conditions do not apply to the Engineering courses given at Squam Lake, or to the Shopwork courses given in Cambridge; since these are a part of the prescribed regular work of the Division of Engineering and are governed by other Faculty regulations.*

2. The work in a course thus approved must be performed under the supervision of one or more of the officers of instruction appointed and confirmed by the governing boards of the University.

3. Proper tests of systematic application and proficiency must be applied in the progress of any such course, in accordance with the regulations of the Faculty for Harvard College.

4. A final examination upon the work of the course must be held in Cambridge not later than October 1st, under the charge of an officer of instruction regularly appointed as above, and under the provisions made by the regulations for the conduct of examinations; and the results, in terms of the grades established by the Faculty, must be reported to the Recorder not later than October 15th. The grade or grades assigned to any student shall then be reported to his father or guardian, and the names of those students in any summer course who attain grade A or B shall be printed in the next annual rank-lists.

5. Summer courses approved by the Faculty as courses to be counted towards any degree shall be included in the annual announcement of courses of instruction.

6. A summer course cannot be used to secure exemption from any part of the elective work required in any academic year, except by permission of the proper administrative board.

7. A student who wishes to take a summer course for the purpose of counting it for a bachelor's degree, shall be required to consult the Instructor at the beginning of the course, and obtain his consent to count it.

8. A student shall be required to obtain a grade of C or higher in a summer course in order to count it for a bachelor's degree. (In 1909 a student is required to attain a grade of B or higher in the courses in History, Government, and in Cryptogamic Botany.)

9. In any one year no student may take during the session of six weeks in the Summer School at Cambridge more than one half-course to be counted towards a degree in Harvard University.

10. No student may count a summer course for a degree if he counts an equivalent course taken in the regular academic year.



11. Any member of a summer class who proves unsatisfactory may be excluded from the class by the Instructor, with the consent of the Chairman of the Committee on Summer Courses of Instruction.

## ADMISSION TO HARVARD AND RADCLIFFE COLLEGES BACHELORS' DEGREES

Harvard College confers the degree of bachelor of arts, A.B., or bachelor of science, S.B., on men only. Radcliffe College confers the degree of bachelor of arts, A.B., on women only.

All candidates for a bachelor's degree in Harvard College or Radcliffe College must be admitted to candidacy for the degree by the authorized committee; and a minimum of one year of resident study as a regular member of a class in one of these colleges is required. The terms of admission to the two colleges are practically identical.

A student who wishes to enter Harvard or Radcliffe College as a candidate for a bachelor's degree must ordinarily pass examinations for admission, either those of the University or those of the College Entrance Examination Board; but if he comes from another college or scientific school or normal school, he may be admitted without examination as indicated below.

Graduates of other colleges and scientific schools, and students who have completed creditably the work of at least one year at other colleges and scientific schools, may be admitted without examination to the standing in Harvard, or Radcliffe, College for which their previous training seems to qualify them. Such students may win the bachelor's degree in one, two, or three years, according to the number of courses for which they receive credit at the time of admission to regular standing.

Graduates of normal schools of good standing may be admitted without examination as unclassified or special students to any courses of instruction for which their previous training has qualified them. If the instruction in a normal school is of collegiate grade and based upon an adequate high school course, graduates of such a school may be treated as applicants for admission from other colleges, and may be admitted to candidacy for a degree on

terms which the Committee on Admission will determine in each case.

The courses of study provided by the Faculty of Arts and Sciences are open to mature men who give satisfactory evidence of their fitness for admission, although they are not in a position to meet the requirements for registration as Freshmen and have not studied in another college or scientific school. Each application for this privilege is considered by itself in view of the applicant's previous history and the evidence he furnishes as to his fitness to pursue the particular courses of instruction to which he seeks admission. These students are known as Special Students. Like terms apply to women in Radcliffe College.

Inquiries concerning the terms and methods of admission, and the requirements for the bachelors' degrees, should be addressed to, —

Mr. J. G. HART, *Chairman* (For Harvard College),  
20 University Hall, Cambridge, Mass.

Miss MARY COES, *Secretary* (For Radcliffe College),  
10 Garden Street, Cambridge, Mass.

## ADMISSION TO THE GRADUATE SCHOOLS HIGHER DEGREES

The Graduate School of Arts and Sciences of Harvard University confers the degrees of master of arts, A.M., master of science, S.M., doctor of philosophy, Ph.D., and doctor of science, S.D., on men only.

The Graduate School of Applied Science confers the Master's Degree in Civil Engineering, Mechanical Engineering, Electrical Engineering, Architecture, Landscape Architecture, Forestry, Physics, Chemistry, Zoölogy, and Geology, and the degrees of Mining Engineer and Metallurgical Engineer, on men only.

The Graduate School of Business Administration confers the Master's Degree in Business Administration (M.B.A.), on men only.

Radcliffe College confers the degrees of A.M. and Ph.D. on women only.

Admission to the graduate schools of Harvard University, and to the graduate instruction in Radcliffe College, is granted

to graduates of colleges and scientific schools of good standing. But such admission does not necessarily imply admission to candidacy for a higher degree. Such candidacy is determined by an appropriate committee after considering the student's previous work and the proposed schedule of studies. The candidate for a master's degree must submit a programme of courses forming a consistent plan of work pursued with some definite aim, whether it lies in a single department or field of study, or in more than one; and the work must be completed with distinction. The approval of such a programme by the proper division committee on honors and higher degrees, and by the appropriate administrative board, constitutes formal admission to candidacy for the master's degree.

Single courses, therefore, cannot be offered for a master's degree, except as a part of a schedule of suitable, related studies. The statutes of the University require, moreover, that no candidate for the above-named degrees be recommended "except after thorough public examination, and a residence at the University of at least one year."

Summer courses which are approved as suitable for candidates for the master's degrees will be credited to members of the above-named graduate schools and of Radcliffe College, in partial fulfillment of the requirements for these degrees, in conformity with the regulations, whose details may be learned by addressing the officers named below.

Progress towards the masters' degrees may now be made by means of the summer courses when candidates need more than a full year of resident study for the degree, or when they lack some collateral work which cannot be conveniently done during the year of required residence.

*The Chairman of the Committee on Summer Courses would be obliged if graduates who are interested in the offering of advanced courses in the Summer School, suitable for candidates for the higher degrees, will communicate with him concerning the courses they wish to pursue; so that the Committee may be able to provide, when possible, for the courses desired.*

Graduates who wish further information concerning the requirements for the higher degrees in Harvard University are advised

to make application, if practicable, before beginning the course of study, to —

Mr. G. W. ROBINSON, *Secretary* (In Arts and Pure Science),  
10 University Hall, Cambridge, Mass.

Professor W. C. SABINE, *Dean* (In Applied Science),  
16 University Hall, Cambridge, Mass.

Professor E. F. GAY, *Dean* (In Business Administration),  
17 University Hall, Cambridge, Mass.

(The foregoing for men only.)

Miss MARY COES, *Secretary* (For Radcliffe College),  
10 Garden Street, Cambridge, Mass.

## TUITION, AUDITOR'S, AND REGISTRATION FEES

The tuition fee varies from \$20 to \$30 in the different courses. In the languages, in mathematics, and in such others as are purely lecture courses, the fee is, in nearly all cases, \$20. In the courses in Fine Arts, and in others where special assistance and oversight are required, the fee is \$25. In the laboratory courses in astronomy, botany, physics, and chemistry the fee is \$30. In chemistry there is an additional charge for materials and for breakage of apparatus.

The student who registers in more than one course is required to pay the tuition fee for each course in which he registers. But any student who has registered and paid the full fee in one course (except in oral reading) may, for an additional fee of \$10, secure the privilege of attending the lectures in any other lecture courses given in Cambridge, as an auditor, except in Physical Education in which special arrangements must be made. This auditor's privilege will not entitle the student to participate in any of the class exercises, or to take any of the examinations, or to receive any record or credit in the courses which he attends as an auditor.

A registration fee of \$2 will be required of all students.

Students may register on and after July 2, in Massachusetts Hall.

## PAYMENT OF FEES

The tuition fee for each course and charges for supplies or laboratory are stated in the description of the course herein.

No reduction of fee will be allowed for late entrance, or for withdrawal, except on account of illness or other like serious and unavoidable cause. In no case will a reduction be allowed when the student is present during more than half the term. All claims for a reduction must be presented to the Chairman of the Committee on or before August 18, 1909.

When more than one course is taken the full fee for each course is charged, unless the contrary is stated in the description of the course herein, where details about fees are given.

Before being enrolled as a member of a class each student is required to register in person at the office of the Summer School, and to pay all fees and charges at the Bursar's Office in Dane Hall.

*Money to meet expenses should be brought in cash, bank drafts, certified checks, or cashiers' checks. Checks or drafts should be drawn on Boston, New York, or Philadelphia banks in order to save cost of exchange.*

*Private checks are not negotiable.*

## BOARD, ROOMS, AND EXPENSES

Table-board may be found in Cambridge during the session of the Summer School in private boarding houses or in public restaurants near the college buildings. It may be engaged by the week, by the meal, or, in public restaurants, *à la carte*.

The prices for table-board alone will range from \$4 to \$8 per week. Satisfactory board can be had in a great many places at \$5 to \$6 per week. Members of the School wishing to practise strict economy may be accommodated in a few private houses at \$4 or \$4.50 per week, or may use the "combination meal" plans of the lunch rooms and public restaurants. In many of the lodging-houses arrangements may be made for self-boarding in part, or for taking single meals either by the day or by the week. Higher priced board may be had at a number of places in Cambridge, and there are many Boston hotels and restaurants which may be



reached by trolley in twenty to thirty minutes from Harvard Square.

Furnished single rooms or suites of rooms may be found in great abundance in private houses and halls in one to ten minutes' walk from the University grounds. The prices for single rooms range from \$1 to \$4 per week, and for suites of rooms from \$2.50 to \$7 per week. Many of the single rooms and suites may be occupied by two persons. The prices quoted here include the care of the furnished room, and light, as well as the use of a bathroom and in most cases a parlor.

Arrangements can be made to secure table-board and rooms in the same house, or to engage rooms in one house and take meals outside.

Furnished apartments and furnished houses may be hired at reasonable rates by those who wish to undertake housekeeping, or by groups of friends who may wish to lodge together.

A list of lodging and boarding houses may be had on application to the Chairman of the Summer School, 4 Lawrence Hall, Harvard University, Cambridge, Mass. (See p. 200.)

It is advisable, in general, to make arrangements for board and room in person, only after inspection; but it is a convenience, both to the student and to the lodging, or boarding, house keeper, to make engagements (provisional, at least) in advance. The Chairman of the Summer School will give information about locations and prices, but he cannot make engagements for students. The student should have a clear understanding with the landlord as to the length of time for which rooms and board are engaged, whether for the six weeks or less. It is generally understood that accommodations are taken for the full six weeks, unless a distinct contract for a shorter time is made when the rooms and board are engaged.

*The Summer School Office will be open on July 6 and 7 from 8 A.M. to 10 P.M.* Arrangements will be made to secure temporary lodgings, if necessary, for those who reach Cambridge late in the afternoon, or before 10 P.M., and have not engaged rooms in advance. Cambridge restaurants close at 7.30 P.M.

The necessary expenses in Cambridge for the six weeks of the Summer School — including tuition fee in one course, registration

fee, meals, room, and laundry, but not including traveling expenses, — will vary from \$60 to \$100, according to the course of study taken and the economy of the student. If two courses are taken, the fee for the second course must be added to the above estimate. Eighty dollars for the six weeks may be regarded as a liberal allowance for all the necessary expenses for a single course of study.

### MAIL

Persons expecting to enter the Summer School may have their mail addressed in care of the Chairman of the Summer School, Massachusetts Hall, Cambridge, Mass., until they have fixed their Cambridge addresses.

The Cambridge Post Office is near the College Yard. There are four mail deliveries at residences each week-day by the P. O. Department.

To facilitate the delivery of letters or telegrams, Cambridge addresses should be filed promptly at the office of the Summer School.

### REDUCED RAILWAY FARES

The Eastern Canadian, the New England, and the Trunk Line Passenger Associations, — controlling the railway lines throughout eastern Canada, New England, New York State, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia, western Virginia, and West Virginia, — have granted a reduced fare to members of the Harvard Summer School who purchase through tickets to Boston from important stations in their territory and comply with the prescribed conditions stated below.

Members of the School from more distant points are able to save a substantial part of their travelling expenses by purchasing a local ticket to some important station within the territory above specified, and there making arrangements for the reduced rate on the return trip. Such stations are Washington, D. C., Baltimore, Md., Charleston and Wheeling, W. Va., Pittsburg, Erie, and Philadelphia, Pa., Bellaire, O., Buffalo, Niagara Falls, Suspension Bridge, Rochester, Watertown, Ogdensburg, Albany, and New York, N. Y., etc.

The rate charged is *full fare going*, and *three-fifths the regular fare returning*.

The passenger should purchase a through ticket to Boston, paying full fare therefor, and ask for either the Eastern Canadian, the New England, or the Trunk Line Association Certificate at the time the ticket is purchased. This Certificate must be deposited for validation with the Chairman of the Summer School immediately after reaching Cambridge. A fee of twenty-five cents is charged by the Passenger Associations for the validation.

The ticket should be bought and the Certificate secured *at least thirty minutes* before the scheduled time of departure of the train.

Going tickets must be purchased between July 3 and July 9, inclusive. The return journey may be made at any time up to, and including, August 21, 1909, but not later.

No reduction is allowed on the homeward fare unless the going fare amounts to seventy-five cents or over.

The return journey must be by the same route as the going trip, and no stop-over is allowed.

The Certificate is not transferable.

All students who can conveniently use this method of reducing traveling expenses are urged to do so. The success of the plan this year and the possibility of securing the reduction in future years depend on the number of persons using it.

In order to secure the reduced rate 100 persons must present either the Association Certificate or the return coupon of a round-trip ticket to Boston from some point where the reduction is obtainable. Hence, all who do not use the reduced rate are requested kindly to use a round-trip ticket, if convenient, so as to help assure the lower fare on the homeward journey for other members of the School. The plan has been in successful use each year for the past eight years.

Members of the Summer School who reside near enough to Cambridge to return home each day are advised to inquire of their local ticket agent about special student rates, or commutation tickets, or fifty-ride tickets.

Students from the Pacific Coast States are advised to inquire about the "Nine Months Tourists' Rates" and other opportunities for securing reduced round trip tickets to eastern points.

Students from all sections of the country are advised to inquire of their local passenger agents concerning reduced rates which may

be granted on account of expositions, or the meetings of societies, in Boston or vicinity about July 1st; or special tourists' rates to persons visiting summer resorts on the New England coast or in the White Mountains. (See pp. 198-199.)

## HISTORICAL EXCURSIONS AND EVENING EXERCISES

A series of excursions for members of the Summer School, under the management of experienced guides and historical students, will be conducted on Wednesday afternoons and Saturdays to places of historic interest in the vicinity of Cambridge, — including Old Boston, Bunker Hill, Lexington, Concord, Marblehead, Haverhill, Amesbury, Plymouth, Salem, and Danvers. Within the city limits of Cambridge may be seen the Washington Elm and Headquarters, where Washington first took command of the American Army, July 3, 1775; the "Bishop's Palace"; the site of the Oliver Wendell Holmes House; Christ Church and the old burial ground; "Tory Row"; the Longfellow and Lowell houses; the Mt. Auburn Cemetery, and other points of personal or historic interest. (For details see page 96.)

A course of evening lectures and readings from English and American literature will be provided, without charge, for members of the Summer School; and special afternoon and evening lectures, on important topics of interest to members of the Summer School, will be given. Informal receptions will be held in the Hemenway Gymnasium and in Phillips Brooks House for the promotion of mutual acquaintance and friendship.

## RECREATION

The opportunities for wholesome recreation in the afternoons, evenings, and Saturdays, are abundant. The University tennis courts are kept in order throughout the summer. One of the University boat-houses on the Charles River is open to members of the Summer School for a small fee which entitles the student to his choice from a variety of boats for rowing on the Charles River Basin within half a mile of the University Grounds.

A labyrinth of trolley-car lines, radiating from Boston and Cambridge, affords unrivalled opportunities for pleasant excursions to

hills, forests, parks, rivers, lakes, and the seaside. Some of the inland places which may be thus visited in an afternoon excursion are the Middlesex Fells, Spot Pond, Arlington Heights, Mystic Lake, Lexington, Concord, the Wayside Inn, Fresh Pond, Waverley Oaks, Norumbega Park, Wellesley Hills, Echo Bridge, the Riverside Boat Club, the Dedham Boat Club, Chestnut Hill, Franklin Park, Blue Hill Reservation, etc.; and among seaside places which may be reached by trolley are Salem, Gloucester, Marblehead, Swampscott, Lynn, Revere Beach, Winthrop Beach, City Point Beach, etc.

Boat lines in daily and hourly operation offer delightful sails in Boston Harbor and Boston Bay, — to Nantasket Beach, Plymouth, Provincetown, Winthrop, Hingham, Pemberton, Bass Point, Nahant, Lynn, Salem, Marblehead, Gloucester, etc. Boats are run daily in the summer to the fishing grounds outside Boston Harbor.

Sea bathing may be had (within easy reach by trolley or railway or boat) at the Cambridge bathing beach, the City Point (Boston) bathing beach, and at the Metropolitan Park Reservations on Revere Beach and Nantasket Beach.

Arrangements for private swimming lessons in the fresh water pool of the Sargent Gymnasium, or at the seaside, may be made with competent instructors.

Lists of the many summer resorts along the coast, by the lakes, on the rivers, and in the mountains, of New England and Canada will be provided at the office of the Summer School for members who wish to visit these resorts at the close of the session.

## LIBRARIES, MUSEUMS, ETC.

During the session of the Summer School the College Library, in Gore Hall — containing 496,250 bound volumes, 343,200 pamphlets, a collection of maps numbering 27,450 sheets, and a large collection of coins — will be open every week-day except Saturday from 9 A.M. till 5.30 P.M. On Saturday it is open from 9 A.M. till 1 P.M. Members of the Summer School may use books in the Library without charge; but a temporary deposit of \$10 is required of all who wish to withdraw books for home use.



In addition, a Text Book Library in Lawrence Hall, containing a large number of text books for comparative study, will be accessible to all members of the Summer School without charge. It will be open every week-day, except Saturday, from 9 A.M. till 12 M., and from 1 P.M. till 4 P.M. On Saturday it will be open from 9 A.M. till 12 M. The separate libraries of the departments of Chemistry, Physics, Botany, History, Philosophy, Fine Arts, Education, Architecture, etc., may be used by qualified students in these Departments.

The libraries of the Harvard Divinity School, Medical School, Law School, and Dental School may be consulted by those desiring to pursue researches in them, by special arrangement.

The Boston Public Library — which is one of the largest and best stocked in the country — the Cambridge Public Library, the Libraries of the Massachusetts Historical Society, of the New England Genealogical Society, and of many other institutions in Boston, Cambridge, and vicinity, afford unusual opportunities for special research, and are conveniently accessible to members of the Summer School.

Among the University Museums may be named the following: The Museum of Comparative Zoölogy — containing various systematic collections of the fauna of the principal countries of the world, and special collections of Quaternary, Tertiary, Mesozoic, and Palaeozoic fossils; the Botanical Museum — containing the Ware Collection of glass models of flowers, and collections designed to illustrate the principal systematic, biological, and economic relations of plants; the Mineralogical Museum — containing collections of meteorites, agates, and large systematic collections of minerals; the Geological Museum; the Peabody Museum of Archaeology and Ethnology; the Semitic Museum; the Fogg Art Museum; the Germanic Museum; the Social Museum; the Warren Anatomical Museum of the Harvard Medical School; the Dental Museum of the Harvard Dental School; and the Arnold Arboretum and Museum — all of which are accessible to interested members of the Summer School. Many of them are open every week-day and may be visited freely.

Other important museums in Boston or vicinity are the Boston Museum of Fine Arts, the Museum of Natural History, the U. S.

Naval Lyceum and Museum, and the Barnum Museum of Natural History. These are freely open to the public at specified hours.

The Harvard Astronomical Observatory and the Gray Herbarium may be consulted by qualified persons. The Harvard Botanical Garden is freely open to the public every day of the week.

Among the laboratories of the University open to members of the Summer School are: The Chemical Laboratory in Boylston Hall, the Physical Laboratory in Jefferson Hall, the Psychological Laboratory in Emerson Hall, the Students' Astronomical Laboratory on Jarvis Street, the Botanical Laboratory in the University Museum, and the Drawing Rooms of the Department of Architecture and Design in Robinson Hall. The Laboratories are thoroughly equipped for their purposes and are liberally used for instruction in the Summer School.

The University Reading Room in the General Library in Gore Hall will be open to all members of the Summer School during the hours when the Library is open. It is abundantly supplied with encyclopaedias, dictionaries, indexes, hand-books, reference books, etc.; and contains all important current and bound periodicals. Ample provision is made for writing and study in this room, affording a quiet place where members of the Summer School may work at their convenience.

Departmental Reading Rooms will be open for study at convenient hours, — in Harvard Hall for students in History, Government, and Economics, — in Emerson Hall for students in Philosophy, Psychology, Ethics, and Metaphysics, — in Robinson Hall for students in Architecture, Design, and Art, — in Boylston Hall for students in Chemistry, — in the Peabody Museum for students in Anthropology, — in Lawrence Hall for students in Education, — and in Holden Chapel for students in Music.

The large parlor in Phillips Brooks House will be open each week-day for all members of the Summer School as a place for social gathering and conversation. Rest rooms and a writing room in the same house will be reserved for the women members of the Summer School.

## THE HARVARD TEACHERS' ASSOCIATION

Members of the Harvard Summer School are eligible for membership in the Harvard Teachers' Association. This Association meets annually at the University in March. Its proceedings are published and distributed to members in May of each year. All members of the Summer School who wish further information about this Association are invited to correspond with the Secretary, Professor PAUL H. HANUS, 2 Berkeley St., Cambridge, Mass.

## THE HARVARD SUMMER SCHOOL ASSOCIATION

*(The following account of the Harvard Summer School Association has been prepared by the Secretary-Treasurer, and is gladly inserted here for the information of members of the Summer School.)*

As the Harvard Summer School has been growing in numbers and broadening its scope and its social interests, an increasing need has been felt for a closer union of the students, and for more active coöperation between the student body and the officers of the School. The increase of administrative duties has made it more and more difficult for the Committee of the Faculty in charge of the Summer School to get in touch with the students, and to draw them within the circle of sympathetic helpfulness which is one of the finest characteristics of the School; and the students, on their part, have lacked an organization when concerted action was necessary or desirable, — as, for instance, when those students who knew of the devotion of Professor Shaler to the School which he had built up and for so many years directed, wished to give some public expression to their appreciation of his work. When, therefore, the formation of a Harvard Summer School Association was suggested, late in the session of 1907, the response was so quick and enthusiastic that a meeting of students was called to consider such an organization.

In response to the call, representatives from nineteen states gathered in the Fogg Lecture Room on the evening of August 7; and after a brief discussion agreed that an association of Harvard Summer School Students would promote good fellowship and mutual helpfulness in the student body, would be of use in presenting the needs and wishes of the students to the Faculty, and would

assist in making more widely known the opportunities for study and recreation afforded by the School. It was then unanimously voted, — “That we proceed to the formation of a Harvard Summer School Association,” and a President, Vice-President, Secretary-Treasurer, and eight additional members were elected as an Executive Committee. On the following day, August 8, the Executive Committee discussed plans for the next year’s session and adopted the following constitution: —

*First.* — Any person who is or has been a member, either as student or as instructor or other officer, of the Harvard Summer School of Arts and Sciences, is, *ipso facto*, a member of the Harvard Summer School Association.

*Second.* — The object of this Association is to promote the interests and welfare of the Harvard Summer School and of its members.

*Third.* — The officers of the Association shall be a President, one Vice-President, a Secretary-Treasurer, and an Executive Committee consisting of the foregoing officers, the Chairman of the Summer School Committee, and seven other members; and a Representative Committee chosen from the members of the Summer School on the basis of not less than one representative for each twenty members, or fractional part thereof, from each of the several states, provinces, territories, or countries represented in the Summer School.

*Fourth.* — All the foregoing officers shall be chosen each year at the Annual Meeting from among the members of the Summer School of that year. The member or members of the Representative Committee chosen from any particular State may be nominated by the members of the Summer School who reside in that State. Vacancies occurring during the year shall be filled by the Executive Committee.

*Fifth.* — The Annual Meeting shall be held in Cambridge on the evening of the Monday following the opening of the Summer School.

*Sixth.* — For convenience in the transaction of the business of the Association, a majority of the Executive Committee shall be selected from the members of the Association residing near Harvard College.

*Seventh.* — The Executive Committee shall determine all details concerning the Annual Meeting, and have general charge of 'the affairs of the Association.

*Eighth.* — No dues and no assessments shall be required.

*Ninth.* — These regulations may be amended by a two-thirds vote of the members present at any Annual Meeting.

The officers of the Harvard Summer School Association for 1908-09 are: —

*Executive Committee*

SETH SEARS, *President*,

Franklin School, Boston, Mass.

OLIVE CUDDEBACK, *Vice-President*,

Paterson High School, Paterson, N.J.

FLORENCE EUGÉNIE LEADBETTER, *Secretary-Treasurer*,

Roxbury High School, Roxbury, Mass.

ELVIRA G. BRANDAU, Cambridge, Mass.

WILTON L. CURRIER, DeMeritte School, Boston, Mass.

GEORGE W. EVANS, Charlestown High School, Charlestown, Mass.

JAMES W. FARMER, Louisville Academy, Louisville, Ga.

MARY L. GRAY, Public School No. 20, Queen's, New York, N.Y.

JAMES L. LOVE, Harvard University, Cambridge, Mass.

BERTHA VOGEL, South Boston High School, Boston, Mass.

JOHN C. WEIGEL, Jr., Lombard College, Galesburg, Ill.



## COURSES OF INSTRUCTION

---

**ALGEBRA.** (See page 100.)

**AMERICAN HISTORY.** (See page 91.)

**ANALYTIC GEOMETRY.** (See page 102.)

**ANCIENT ART.** (See page 76.)

**ANGLO-SAXON.** (See page 70.)

---

### ANTHROPOLOGY

HERBERT JOSEPH SPINDEN, A.M., *Austin Teaching Fellow in Anthropology.*

One course in Anthropology will be given in the Peabody Museum of Harvard University, beginning Wednesday, July 7, and ending August 18.

#### S1. INTRODUCTORY COURSE IN ANTHROPOLOGY

The course is designed for those wishing to obtain a general knowledge of the whole field of Anthropology.

The following topics will be considered: —

1. Anthropology, a comparative method of studying human activities; its use as an ancillary and as a master science.
2. An outline of the physical character of man, his origin, his relation to the anthropoid apes, his division into races and varieties, and the physical criteria of race and sex. Criminal Anthropology.
3. The distribution of man from geological to historical times. The archaeology of Europe and America in the stone and metal ages. The earliest migrations of European populations. The peopling of America.
4. Under the general subject of Ethnology the following divisions will be made.

(a) The material culture of primitive peoples; the aspects of the utilitarian arts on the one hand, such as food supply and agricul-

ture, fire making, domestication of animals, architecture, dress, ceramics, weapons, and utensils; and esthetic arts on the other hand, including painting, sculpture and decoration, music, and dancing.

(b) The sociology of primitive peoples, including the study of the origin of the family and tribe; marriage, government, law, property, and ethical standards; commerce, and warfare.

(c) Religion: the origin and growth of the religious idea; Animism, Fetichism, and Shamanism; personal, family and tribal religion; priesthood, ceremonials, and mortuary customs; Mythology and Folk-Lore.

(d) Language: its origin and some aspects of its development.

In addition to the lectures, there will be numerous conferences on the work of the course. The Anthropological Library in the Peabody Museum, containing 3,713 volumes and 3,188 pamphlets, is open to members of the Summer Class. The extensive and varied collections of the Peabody Museum of Archaeology and Ethnology are used for purposes of illustration in connection with the lectures. Special attention will be paid to the bibliography of the subjects taken up in the course. A printed syllabus giving the required reading and a full outline of the lectures is available.

This course is an abbreviation of Anthropology 1 as given during the college year. It is accepted as fulfilling the preliminary requirements for taking advanced courses in Anthropology, and as a half-course for a degree of A.B. or of S.B. in Harvard University. This course and Anthropology 1 may not both be counted for a degree. (See page 16.)

*The course will meet for at least one hour five times a week for six weeks at 9 A.M., in the Peabody Museum, Room 50.*

The fee for the course is \$25. (See pages 21-22.)

For further information, address the Instructor, Mr. HERBERT J. SPINDEN, Thayer 54, Cambridge, Mass.

---

**ARCHAEOLOGY.** (See page 76.)

**ARCHITECTURE.** (See page 77.)

**ART.** (See pages 73-77.)

## ASTRONOMY

WILLIAM CHARLES BRENKE, Ph.D., *Assistant Professor of Mathematics (University of Nebraska), formerly Assistant in Astronomy and Instructor in Mathematics, Harvard University.*

One course in Astronomy will be given in the Astronomical Laboratory of Harvard University, beginning Wednesday, July 7, and ending August 18.

### S1. DESCRIPTIVE AND OBSERVATIONAL ASTRONOMY

This course covers the ground of the laboratory examination in the requirements for admission to Harvard College. The instruction will be given by Professor W. C. BRENKE.

In this course some attention will be given to purely Descriptive Astronomy, but the time will be devoted mainly to laboratory and observational work, including that required for admission to Harvard College. A part of the observations will require attendance in the early evening hours.

Emphasis will be laid on methods of observation which may be profitably introduced into the teaching of elementary astronomy in the secondary schools, and on the means of providing simple apparatus to that end.

The programme contains exercises which are intended to make the student familiar with the more conspicuous stars and constellations. The diurnal motion of the heavens and the motions of the sun and moon will be investigated by each student from his own observations. The changes of the planets in the short space of six weeks are too small to give valuable results, but methods will be shown by which observations with very simple means, continued for a sufficient interval, will explain these apparently erratic motions.

An exceptionally good equatorial telescope of  $7\frac{1}{2}$  inches aperture made by Alvan Clark and Sons will be used for studying sun-spots, the moon, and other interesting objects. Students who show themselves competent will be given an opportunity to become familiar with this instrument.

To any who may desire to do work in addition to that of the regular programme some opportunity will be given to use the more accurate instruments of the Laboratory.

A good reference library of astronomical books is accessible to members of the class.

This course is accepted in lieu of the examination in Astronomy for admission to Harvard or Radcliffe College. It is accepted, also, as a half-course for the bachelors' degrees in Harvard University. This course and Astronomy 1 may not both be counted for a degree. (See page 16.)

*The class will meet for a lecture period and laboratory work five times a week for six weeks in the Astronomical Laboratory, Jarvis St., Cambridge, at 9 A.M., or at such other times as may be arranged.*

The fee for the course is \$30. (See pages 21-22.)

For further information concerning this course address Professor R. W. WILLSON, 64 Brattle St., Cambridge, Mass.

---

## BOTANY

MINTIN ASBURY CHRYSLER, Ph.D., *Associate Professor of Botany (University of Maine), formerly Instructor in Botany, Harvard University.*

AMON BENTON PLOWMAN, Ph.D., *Professor of Botany (Beaver College, Pa.), formerly Assistant in Botany, Harvard University.*

HERBERT SPENCER JACKSON, A.B., *Austin Teaching Fellow in Botany.*

Three courses in Botany will be given in the Botanical Laboratories of Harvard University at the University Museum, beginning Wednesday, July 7, and ending August 18.

### S1. INTRODUCTORY COURSE: THE STRUCTURE, PHYSIOLOGY, AND ŒCOLOGY OF FLOWERING PLANTS

This is a first course in botany for college students, teachers, and anyone who may desire a knowledge of the fundamental principles of the science as part of a liberal education. The course aims to give insight into the life of plants, and considers: their nutrition, growth, reproduction, response to external influences, relation to environment; the main facts regarding their structure; the relationships among the groups of seed-plants, and between these and the lower plants. In addition, the chief groups of the higher plants are

studied taxonomically in the laboratory and the Botanic Garden. The student may expect to gain some facility in the use of manuals for determining the names of plants. In the laboratory constant practice will be had in the use of the dissecting (simple) microscope; and, to a less extent, practice in the manipulation of the compound microscope. Weekly field trips will be made, in which œcological studies will be a feature.

*Relation to Teachers.* — While primarily a university course, in which attention is paid to developing the *subject* in hand, rather than the *mode of teaching* it, and therefore in no sense a normal course, it is yet designed to be especially helpful to teachers of botany. It should meet the needs of teachers who, although they are familiar with much of the ground, desire a more thorough and scientific training than they have received, with increased knowledge and a wider outlook over the whole field, affording fresh points of view. The matter and, as regards laboratory work, the methods deemed essential to botanical instruction in secondary schools will be illustrated. In the lectures special attention will be given to subjects which ordinarily could not be mastered through self-instruction, but which, though they may be somewhat beyond the limits of high school botany, are of much importance to one who would be well equipped for botanical teaching in the secondary school.

The botanical reference library in the University Museum and the large collections and library of the Gray Herbarium are accessible to qualified members of this class.

The laboratory will be open and under the supervision of instructors from nine until one o'clock, five days in the week.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is the equivalent of Botany 1 of the Harvard Courses of Instruction; and is accepted, also, in lieu of the Elementary Botany of the requirements for admission to Harvard or Radcliffe College. This course and Botany 1 may not both be counted for a degree. (See page 16.)

Members of the class who wish to count this course as a half-course towards a degree, or who wish the Summer School Certificate, will be required to take an examination. Certificates will be given to all who satisfactorily complete the work.



Gray's *Manual*, or *Field, Forest, and Garden Botany* will be needed in Course S1.

*This class will meet five times a week for six weeks from 9 A.M. until 1 P.M., the lecture being at 10.30 A.M., in the Nash Lecture Room, University Museum. The laboratory work will be done in Room 12, University Museum.*

The fee for the course is \$30. (See pages 21-22.)

For further information address Professor E. C. JEFFREY, 47 Lake View Ave., Cambridge, Mass., or Professor M. A. CHRYSLER, University of Maine, Orono, Me.

### S3a. MORPHOLOGY AND ŒCOLOGY OF FLOWERING PLANTS

This course is designed especially for teachers, and for students who have some familiarity with the subject. It consists of a series of thirty lectures and laboratory exercises.

Beginning with a brief survey of the characters of vegetable cells, the course proceeds to a careful consideration of the minute anatomy and cytology of root, shoot, leaf, and reproductive organs of typical forms of flowering plants, with special reference to the important bearing of the observed facts upon the Physiology, Œcology, and Phylogeny of plants. This is followed by an exact study of the principal œcological modifications and adaptations found among higher plants. Attention is directed to the importance of these subjects as a broad foundation for the botanical phases of nature study.

The course includes also a limited amount of field-work, in the shape of a few short excursions to nearby localities affording excellent illustrations of the general principles of physiographic œcology.

Throughout the course constant use is made of compound microscopes, while the lectures are fully illustrated by means of photomicrographs and other lantern slides, charts and living plants. A complete series of illustrative microscope slides is supplied to each student at a merely nominal expense, thus leaving the entire laboratory time free for study and drawing. A few laboratory periods, however, are devoted to general exercises in the preparation of permanent microscope slides, and concise directions are given for the fixing, embedding, sectioning and staining of vegetable tissues; while opportunity is afforded for practical experience in the tech-

nique to those students who desire to take up this very important phase of the subject.

The botanical reference library in the University Museum and the large collections and library of the Gray Herbarium are accessible to qualified members of this class.

Each person who completes this course in a satisfactory manner, and passes the examination at its close, is entitled to the Summer School Certificate.

This course is for the most part equivalent to Botany 3a of the Harvard Courses of Instruction, and is accepted as such in the case of students in Forestry. It is accepted as a half-course for the bachelors' degrees in Harvard University. This course and Botany 3a may not both be counted for a degree. (See page 16.)

*This class will meet five times a week for six weeks at the University Museum, in Room 11, from 9 A.M. to 1 P.M. Lecture at 9 A.M.*

The fee for the course is \$30. (See pp. 21-22.)

For further information address the Instructor, Dr. A. B. PLOWMAN, Beaver, Pa.

## S6. MORPHOLOGY AND DEVELOPMENT OF THALLOPHYTES

This course is intended for students and teachers who desire a knowledge of the morphology and life history of the Algae, Bacteria and Fungi. It consists of a series of thirty lectures and laboratory exercises.

The aim of the laboratory work will be to familiarize the student with the methods of studying these plants, and representative forms will be studied in detail. Such methods will be given for the culture of Bacteria and Fungi as can easily be used with the simple apparatus at the disposal of secondary school teachers. Students will be instructed in the preparation of permanent microscopic slides from fresh material and from free, hard sections.

A limited number of excursions will be made to favorable localities for the observation and study of the more common and representative forms as they occur in nature. As far as practicable the methods of determining species will be given, and students will be assisted in the collection and preservation of their own material for study.

The course is in a general way parallel to Botany 2 of the University courses but is confined to the Thallophytes. It is accepted as a half-course for the bachelors' degrees in Harvard University by those who attain grade *B* or *A* on the course. Students who have been credited with Botany 2 or Botany 6 in term-time cannot count this course for a degree, nor will any student who receives credit for this course be admitted to Botany 2 or Botany 6. (See page 16.)

*This class will meet five times a week for six weeks at nine o'clock in the University Museum, Room 13a.*

The fee for the course is \$30. (See pages 21-22.)

For further information concerning this course address the Instructor, Mr. H. S. JACKSON, 43 Waverley Hall, Cambridge, Mass.

---

**CHAUCER.** (See page 71.)

---

## CHEMISTRY

GREGORY PAUL BAXTER, Ph.D., *Assistant Professor of Chemistry.*

HENRY AUGUSTUS TORREY, Ph.D., *Assistant Professor of Chemistry.*

HARRY LOUIS FREVERT, Ph.D., *Instructor in Physical Chemistry.*

GRINNELL JONES, Ph.D., *Instructor in Quantitative Analysis (University of Illinois).*

JOAQUIN ENRIQUE ZANETTI, A.M., *Austin Teaching Fellow in Chemistry.*

In the summer of 1909 seven courses in Chemistry will be given in the Chemical Laboratories of Harvard University in Boylston Hall, beginning Wednesday, July 7, and ending Wednesday, August 18.

The laboratories will be open daily from eight until five o'clock, except Saturday when they will be closed at twelve o'clock. Students may work as much as they choose within these limits. Instructors will be in attendance between nine and four o'clock.

Students in Chemistry receive not only the privileges of the main Library, but also those of the Chemical Library in Boylston Hall. Both the main library and the department library are provided with an abundant supply of reference books in all branches of the subject and with full sets of the more important chemical periodicals.

The fee for each of the six courses is \$25, except that in case the laboratory work in any course is omitted, the fee for lectures

in that course will be \$15. In addition to the fee for instruction, each student working in the laboratory will be required to deposit \$15 with the Bursar. Of this amount, \$10 covers the cost of materials consumed; the remaining \$5 covers the breakage of apparatus. If the cost of broken apparatus amounts to less than the deposit, the balance will be returned; if the deposit is insufficient to cover breakage, the additional sum will be charged to the student.

## S1. ELEMENTARY THEORETICAL AND DESCRIPTIVE CHEMISTRY

This course will aim first to teach the fundamental laws and theories of Chemistry through the study of a few common substances, and then will consider the properties of some of the more important elements and their compounds, together with their applications in the arts, in as much detail as time will allow. Particular stress will be laid upon the theoretical side of the subject throughout the course, so that the training will be useful to teachers of Chemistry, especially to those engaged in preparing pupils for college entrance examinations in Chemistry. No previous knowledge of Chemistry is necessary, however.

The work will consist of daily lectures, with laboratory work bearing directly on the subject matter of the lectures. Each student will be expected to spend at least five hours of each week-day (except Saturday) in the laboratory. No text-book will be used.

This course is accepted either as a half-course for the bachelors' degrees in Harvard University, or in lieu of the entrance requirement in Chemistry for admission to Harvard or Radcliffe College. (See page 16.)

A statement concerning libraries, laboratories, fees, and hours may be found on page 40. (See also pages 21-22.)

The class will meet for lectures at 9 A.M., in Room 9, Boylston Hall.

Professor BAXTER will give the lectures and have general charge of the laboratory work. Dr. JONES will assist him in the laboratory.

Inquiries concerning this course may be addressed to the Instructor, Professor G. P. BAXTER, Boylston Hall, Cambridge, Mass.

## S2. ORGANIC CHEMISTRY

The course in Organic Chemistry consists partly of lectures and partly of laboratory work. The lectures, which are given daily, present a general survey of the chemistry of the compounds of carbon, in which both theoretical considerations and the practical applications of the subject will be treated. The lectures are illustrated with experiments and specimens. Since so many natural processes have to do with organic substances, a knowledge of organic chemistry is useful and has become almost indispensable to the biologist, physician, and agriculturist, as well as to the chemist. Furthermore, the importance of organic chemistry in commerce is evident when one considers that the petroleum, soap, sugar, starch, cellulose, fermentation, leather, dyeing, and many other industries, are included within the scope of this subject.

The laboratory work consists chiefly in the preparation of typical members of the more important classes of organic substances, such as the hydrocarbons, alcohols, acids, ethers, esters, amines, amides, artificial dyes, etc. Some time may be devoted, if desired, to the quantitative analysis of organic substances. The laboratory work may be varied somewhat according to the needs of the individual student.

The only requirement for this course is a good knowledge of general inorganic chemistry.

This course is for the most part the equivalent of Chemistry 2 of the Harvard Courses of Instruction, with laboratory work added. It is accepted as a half-course for the bachelors' degrees in Harvard University. This course and Chemistry 2 may not both be counted for a degree. (See page 16.)

Attention is called to the fact that Organic Chemistry is now required for admission to the Harvard Medical School, and that this requirement may be satisfied by obtaining a satisfactory grade in the course in Organic Chemistry in the Summer School.

A statement concerning libraries, laboratories, fees, and hours may be found on page 40. (See also pages 21-22.)

The class will meet for lectures at 11 A.M. in Room 9, Boylston Hall. Professor TORREY will give the lectures and have general charge of the laboratory work. He will be assisted in the laboratory by Mr. ZANETTI.



Inquiries concerning this course may be addressed to the Instructor, Professor H. A. TORREY, 15 Boylston Hall, Cambridge, Mass.

### S3. QUALITATIVE ANALYSIS

A systematic course of analysis will be studied, by means of which the composition of inorganic substances may be determined. At the same time many of the more important properties of the common elements and their compounds will be considered. Instruction will be given partly by lectures, but chiefly in the laboratory, where the greater portion of the work will be performed. The laboratory work will consist of a study of the more common reactions involved in analytical chemistry, of the analysis of substances of known composition, and finally of the analysis of substances of composition unknown to the student.

Qualitative Analysis is indispensable to students of chemistry and is useful to those engaged in many other kinds of scientific work. This course requires a previous knowledge of elementary descriptive chemistry.

This course is the equivalent of the first half of Chemistry 3 of the Harvard Courses of Instruction, and it is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 16.) In this case the first half-year of Chemistry 3 in Harvard College may be omitted. If the summer course in Qualitative Analysis is counted for a degree, Chemistry 3 will be allowed to count only as a half-course.

A statement concerning libraries, laboratories, fees, and hours may be found on page 40. (See also pages 21-22.)

The class will meet for lectures at 9 A.M. in Room 7, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Professor H. A. TORREY, 15 Boylston Hall, Cambridge, Mass.

### S4. QUANTITATIVE ANALYSIS

In this course, which will consist mainly of laboratory work, the simpler gravimetric and volumetric methods of determining the amounts of each constituent of a substance will be studied. Quantitative Analysis is the foundation of all advanced chemical work and is therefore necessary for those going further in the

subject. It also trains the student especially in skill, care, and accuracy in manipulation; and is of value in preparing for any scientific work. Students intending to enter the Harvard Medical School are advised to obtain some training in Quantitative Analysis such as is afforded by this course. A knowledge of Qualitative Analysis is desirable for all students in Quantitative Analysis.

This course is accepted as a half-course for a degree in Harvard University. (See pp. 16-19.) It is not, however, the equivalent of either half of Chemistry 4 in Harvard College, and will not be accepted in Harvard College as sufficient preparation for more advanced work in Chemistry.

A statement concerning libraries, laboratories, fees, and hours may be found on page 40. (See also pages 21-22.)

The class will meet for lectures at 2 P.M. in Room 9, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Professor G. P. BAXTER, Boylston Hall, Cambridge, Mass.

## S6. PHYSICAL CHEMISTRY

The growing importance of Physical Chemistry is shown by its ability to solve problems not only in physics and chemistry, but also in botany, zoölogy, physiology, geology, and the manufacturing industries. This course is intended especially for teachers of chemistry who have had no opportunity to obtain instruction in this subject, and for students in other fields who desire a knowledge of Physical Chemistry.

Daily lectures will cover, as fully as time will permit, the subjects: gases, liquids, solids, solutions, chemical equilibrium, thermochemistry, and electrochemistry. The various relations of mass, volume, pressure, and temperature, including such topics as the gas laws, the kinetic theory, critical phenomena, molecular volumes, and phase relations, will be considered. Special attention will be given to the theory of solution, including the subjects of osmotic pressure, vapor tension, the dissociation theory, and the properties of ions. In electrochemistry, electrolytic conductivity and electrochemical potential will be treated.

The lectures will be supplemented by laboratory work, consisting of the study of physico-chemical methods, to which students will be

encouraged to devote as much of their time as possible. The experiments will include the verification of the gas law, determinations of heats of neutralization and solution, determinations of molecular weights by vapor density, boiling point, and freezing point methods, determinations of specific gravities of liquids and solids, measurements of electrical conductivity, electromotive force, adjustment of chemical equilibrium, and velocity of reaction.

Many references will be given for collateral reading. The following text-books will be found useful: James Walker, *An Introduction to Physical Chemistry* (Macmillan & Co.); H. C. Jones, *Elements of Physical Chemistry* (Macmillan & Co., 1907); Findlay, *Practical Physical Chemistry* (Longmans, Green & Co., 1906). These reference books will all be available in the Chemical Library in Boylston Hall.

For the best understanding of the course the student should have a knowledge of descriptive chemistry, elementary quantitative analysis, and organic chemistry, as well as of elementary physics and mathematics (analytical geometry is very desirable). The course will not be deeply mathematical, however. Much attention will be paid to the practical application of the principles involved.

This course is accepted as a half-course for a degree in Harvard University. (See pp. 16–19.) Students who satisfactorily complete this course will be admitted to Chemistry 6 in Harvard College without having taken Chemistry 8, and may also omit the laboratory work in Chemistry 6. Chemistry 6 taken in this way will be allowed to count only as a half-course.

A statement concerning libraries, laboratories, fees, and hours may be found on page 40. (See also pages 21–22.)

The class will meet for lectures at 11 A.M. in Room 7, Boylston Hall.

Inquiries concerning this course may be addressed to the Instructor, Dr. H. L. FREVERT, Boylston Hall, Cambridge, Mass.

## S20. RESEARCH

Facilities for research in Inorganic Chemistry, S20*a*, under the direction of Professor BAXTER, or in Organic Chemistry, S20*b*, under the direction of Professor TORREY, will be afforded to those who desire it and are properly qualified.

Research in either of these courses is accepted as a half-course for a degree in Harvard University. (See pp. 16-19.)

The classes will meet in the Chemical Laboratories in Boylston Hall.

A statement concerning libraries, laboratories, fees, and hours may be found on page 40. (See also pages 21-22.)

---

For further general information concerning these courses, address Professor G. P. BAXTER, 2 Boylston Hall, Cambridge, Mass.; for special information, address the instructors in charge of courses.

---

### CIVIL GOVERNMENT. (See page 92.)

---

### THE CLASSICS

CHARLES BURTON GULICK, Ph.D., *Assistant Professor of Greek.*

EDWARD KENNARD RAND, Ph.D., *Assistant Professor of Latin.*

WILLIAM WILSON BAKER, Ph.D., *Associate Professor of Latin*  
(*Haverford College*), *formerly instructor in Latin, Harvard University.*

### GREEK

Two courses in Greek will be given in 1909. The work will begin on Wednesday, July 7, and end on Wednesday, August 18, 1909.

Professor Gulick will give both courses.

### SG. GREEK FOR BEGINNERS

This course is designed for persons who have never studied Greek, and who wish to acquire such a knowledge of the essentials as will enable them to begin with some facility the study of the great classical writers. The course may be taken by any teacher or student, but an acquaintance with some other inflected language, like Latin or German, will prove advantageous. The needs of students in modern languages, history, and theology will be kept primarily in view; but attention will also be paid to the use of Greek in modern scientific nomenclature, so that students of the sciences as well will find the course useful. The first four

weeks will be devoted to a study of the elements of the language, and to readings and translations by the instructor; during the last two weeks, students will be expected to prepare assigned lessons in Marchant's *Greek Reader* (English translation of Wilamowitz's *Griechisches Lesebuch*), or in some Greek author like Xenophon. Thoroughness and accuracy will necessarily be required, as affording the only sure basis for profitable reading later; but the instructor will aim to impart the spirit of the Greek classics rather than a technical knowledge of forms and syntax.

*Text-books.* — White's *First Greek Book* (Ginn & Co., \$1.25); Macmillan's *Greek Reader*, by F. H. Colson (The Macmillan Co., \$.75); E. C. Marchant, *Greek Reader*, Vol. I (Oxford, Clarendon Press, 2 shillings).

*The class will meet for at least one hour five times a week for six weeks at 10 A.M., in Sever 29.*

The fee for this course is \$20. (See pages 21–22.)

For further information address the Instructor, Professor C. B. GULICK, 59 Fayerweather Street, Cambridge, Mass.

## S10. THE LIFE OF THE ANCIENT GREEKS

Selected topics in Greek private life from the Homeric Age to the fourth century B.C. will be the theme of the lectures in this course. The instructor will treat systematically the known facts relating to Greek education; military antiquities; customs at birth, death, and marriage; the life of the citizen; the professions; and then in general, so far as the time permits, the background of Greek literature, especially of Homer and Xenophon, the authors most read in school. Both these authors and the monuments of art, such as sculpture and vase-paintings, will be constantly used as authorities and in illustration of the facts set forth. Through the use of the lantern and of photographs, as well as actual memorials of Greek life in the Fogg Museum and the Boston Museum of Fine Arts, the student will be encouraged to realize and vivify the setting of the ancient authors.

The course is intended chiefly for teachers, but others may be admitted on consultation with the instructor. No knowledge of Greek is required. The course is accepted as a half-course for a bachelor's degree in Harvard University; but it is not open to



students who have passed in Greek 10, nor may those who pass it take Greek 10 subsequently. (See pages 16-19.)

*Text-books.*—No text-books are required, but the student may find it helpful to refer to the Instructor's *Life of the Ancient Athenians* (D. Appleton & Co., \$1.40).

*The class will meet for one hour five times a week for six weeks at 9 A.M., in Fogg Lecture Room.*

The fee for this course is \$25. (See pages 21-22.)

For further information address the Instructor, Professor C. B. GULICK, 59 Fayerweather Street, Cambridge, Mass.

---

## LATIN

Two courses in Latin will be given in 1909, beginning Wednesday, July 7, and ending Wednesday, August 18. Course SA will be given by Assoc. Professor W. W. BAKER, and Course SD by Asst. Professor E. K. RAND.

### SA. COURSE IN LATIN FOR TEACHERS

This course considers in detail the various requirements in the Harvard Entrance Examination in Latin, in such a way as to give also a general survey of the work of a teacher of elementary and advanced Latin in the secondary schools. The instructor aims both to furnish useful material and to suggest desirable methods for teaching.

The course will follow the four years of the school programme, considering, first, Beginners' Books in Latin, and then the authors mentioned in the Harvard requirements—Nepos, Caesar, Ovid, Cicero, Virgil. Lectures will be given from time to time on various matters in grammar, such as the pronunciation of the language, the formation of words, the syntax of the moods and of the cases. Typical selections will be read from the different authors, accompanied by brief lectures on the life and times of each of them, on their significance in literature, and on the best method of presenting their works in the schools. There will be constant practice in recitation, in which particular attention will be paid to the intelligent reading of the language, especially of Latin verse; to translation of prepared work, and translation at sight; to written translations which will be carefully criticised as exercises in English

composition; to important questions of grammar and style, and to interesting features of ancient life suggested by the subject-matter. Weekly exercises in Latin composition will form part of the work. Helpful bibliographies will be furnished, both of general works and of special books relating to the authors.

The object of the course, then, is first of all to treat in detail the Harvard entrance requirements in Latin and the best methods of preparing for them, but, further, to discuss the school programme as a whole, to enlarge the teacher's acquaintance both with the authors and with important matters in Latin grammar and Latin literature of immediate significance for his work, and, finally, to suggest suitable methods of presentation.

The prescribed reading will include Caesar's *Bellum Gallicum*, vii; the following myths from Ovid's *Metamorphoses*: *Deucalion*, *Daphne*, *Phaëthon*, *Pyramus*, *Perseus*, *Meleager*, *Philemon*, *Alcyone*, and *Galatea*; Cicero, *Pro Lege Manilia*; Virgil, selections from the *Aeneid*, *Eclogues*, and *Georgics*.

*Text-books.*—Each student will need a complete text of Virgil, Caesar's *Bellum Gallicum*, and Ovid's *Metamorphoses*, and some edition of Cicero's orations which contains the speech *Pro Lege Manilia*. Other necessary books will be announced at the opening of the course, and all can be obtained in Cambridge. The most important Beginners' Books in Latin, and school editions of the authors, will be exhibited and discussed in class.

*The class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 18.*

The fee for this course is \$20. (See pages 21–22.)

For further information address the Instructor, Professor W. W. BAKER, Haverford College, Haverford, Pa.

## S.B. THE LIFE AND WORKS OF VIRGIL

This course has a two-fold object: it aims not only to equip the teacher of Virgil in the secondary school with the information indispensable for his immediate purpose, but also to present with some detail the larger bearings of his subject in its relations to classical and modern literature.

The majority of the meetings will be devoted to the reading, translation and discussion of illustrative selections from the works

of Virgil. The larger part of the *Eclogues* and the *Georgics* will be read; the first four books of the *Aeneid* will be made the subject of special study, with reference to the new admission requirements for Harvard College. Books of the *Aeneid* will be assigned for special reports; if time permits, one or more of the shorter poems attributed to Virgil will be read. The purpose of these readings is to furnish the teacher an adequate conception of the entire body of Virgil's works, as well as to give practice in the correct reading of the Latin hexameter and in the translation of Latin poetry into appropriate English. The translations will be made sometimes by the instructor, sometimes by the members of the course, and generally will be written.

In addition to these readings and translations there will be lectures on various subjects of importance relating to Virgil, such as the life and times of Virgil; his place in the history of Epic, Didactic, and Pastoral Poetry; literary criticism of Virgil in antiquity; the transmission of Virgil's poems in the Middle Ages; the mediaeval conception of Virgil; and his influence on the poetry of the Renaissance and modern times. At the first meeting of the course a select bibliography of Virgil will be given, and the principal editions and English translations will be discussed.

This is in no sense an elementary course; members should already have a general acquaintance with Virgil, and have read a considerable portion of his works.\*

*Text-books.*—Members of the course should be provided with a text of Virgil containing the complete works, such as Ribbeck's smaller edition, published by Teubner, Leipzig. It may be had at the store of the Harvard Coöperative Society. There are in the Harvard College Library rich collections of books on Virgil, which will be at the disposal of the members of the course.

This course may be counted as a half-course for the bachelor's degree by students who complete the course satisfactorily and fulfil the requirements set forth on page 16.

*The class will meet for one hour five times a week at 9 A.M., in Sever 18.*

The fee for this course is \$20. (See pages 21–22.)

For further information about this course, address the instructor, Professor E. K. RAND, 107 Lake View Ave., Cambridge, Mass.

## EDUCATION

FRANK ELLSWORTH SPAULDING, Ph.D., *Superintendent of Schools, Newton, Mass.*

WILLIAM TRUFANT FOSTER, A.M., *Professor of English and Education, Bowdoin College.*

HENRY WYMAN HOLMES, A.M., *Instructor in Education.*

Four courses are offered in 1909, beginning Wednesday, July 7, and ending Wednesday, August 18, as follows:—

S2. Principles of Education.

S3. The Organization and Administration of Schools and School Systems.

S3c. Elementary Schools.

S6. Froebel's Philosophy of Education.

*The attention of teachers interested in courses treating college admission subjects from the point of view of the teacher, is called to the following courses:—*

Astronomy (p. 35); Botany (p. 36); Chemistry (p. 41); Greek (p. 46); Latin (p. 48); English (p. 68); German (p. 82); History (pp. 85–92); Civil Government (p. 92); Mathematics (pp. 100–102); Harmony and Counterpoint (p. 108); Physics (pp. 128–130); French (p. 141); and Spanish (p. 144).

Detailed descriptions of these courses are given below.

The fee for each course is \$20. (See pages 21–22.)

A considerable amount of written work, in addition to prescribed reading, is required of students who are candidates for the Summer School Certificate. Students will have an opportunity, under the general direction of the instructors, to prepare written theses and discuss topics in which they are especially interested; and advanced students may be invited to present their theses for discussion at conferences to be arranged.

The GENERAL LIBRARY of the University will be in constant use, and in the READING-ROOM will be found a group of books on Education arranged for the convenience of students.

The attention of members of these courses is also called to the library of the Department of Education in Lawrence Hall. Besides books on Education, this library contains a collection of more than 5,000 recent text-books and reference-books, issued and contributed

by leading publishers. It will be open daily from 9 A.M. till 12 M., and, except on Saturdays, from 1 till 4 P.M.

## S2. GENERAL PRINCIPLES OF EDUCATION AND PROGRAMMES OF STUDY

This course aims to present a general introduction to educational theory. The work consists of lectures, discussions, reading, and oral and written reports by members of the class on assigned topics. All the books referred to by the Instructor will be found in the Department Library, or in the University Library in Gore Hall.

The following topics indicate the scope of the course : —

1. The Meaning of Education. Education as a vital function of society, considered in its relation to biology, physiology, psychology, sociology, and philosophy. The possibility of a science of Education.
2. The Function of the School. The specialized agency of systematic education during the plastic period of infancy.
3. Educational Aims and Values. Various aims considered as adjustments of the individual to his environment. Formal discipline as the aim of education. Relative values of knowledge. Formal and intrinsic values. Special aims of elementary and of secondary education.
4. The Acquisition of Experience. Apperception. Attention. Interest. Habit. Judgment. Reasoning.
5. The Recall of Experience. Factors of memory and bearings on educational method. Correlation of studies.
6. Periods of Child Development. The transition, formative and adolescent stages. Physical, mental, and moral characteristics, needs, and capacities of each period.
7. Principles of Teaching. Method of the recitation.
8. Physical Education. Rational teaching of hygiene. Comparative physical development of boys and girls. Instruction in sex. Fatigue. School hygiene.
9. Moral Education. The discipline of character. Habit. Direct ethical instruction. Inadequacy of ethical incentives.
10. Religious Education. Principles of religious education. Nature of the problems.
11. The Curriculum. Typical courses of study for elementary and secondary schools. Adjustment to local and present needs. Vocational Education. Elective and prescribed studies. Articulation of the school system from kindergarten to university.



12. The Teacher. Qualifications. Professional training. Compensations.
13. The Educational Outlook. Contemporary needs, problems, resources, and difficulties.

A provisional syllabus of this course, indicating the required readings and other references, may be secured by addressing Professor WILLIAM T. FOSTER, Bowdoin College; Brunswick, Me.

This course is accepted as a half-course for a degree in Harvard University. This course and Education 2a may not both be counted for a degree. (See pages 16-19.)

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Lawrence 7.*

The fee for the course is \$20. (See pages 21-22.)

For further information concerning this course, address Professor WILLIAM T. FOSTER, Bowdoin College, Brunswick, Me.

### S3a. ORGANIZATION AND ADMINISTRATION OF SCHOOLS AND SCHOOL SYSTEMS

This course is intended primarily for superintendents of schools, for principals of high and elementary schools, and for teachers of experience who desire to study school organization and administration with a view to becoming principals or superintendents.

For teachers who do not expect to become principals or superintendents the course will be of value in giving them an appreciative understanding of the difficulties of administration, making clear their own proper relations to the general plan, and enabling them to do more harmoniously and effectively the particular work assigned them. It is hoped that the course will also meet the needs of school officials and other mature students who are not teachers or supervisors, but who may wish to study the organization and administration of educational activity as a branch of municipal affairs.

The course will comprise:—

- I. A brief consideration of the problem of public education, for the purpose of outlining a definite educational policy.
- II. A detailed study of school organization, administration, and supervision, as the means through which it is sought to carry out

the public educational policy. This study will deal with the following principal topics: —

1. A brief discussion of the general problem of public education in the United States: ideals; practices; progress.
2. Units of administration: the district, town or city, county, state. — Origin and development of these units; general plans of organization within each unit; relations of units of administration, financial, administrative, and supervisory; advantages and disadvantages of existing units of administration; tendencies toward centralization.
3. The city school board. — Manner of election, term of service, number of members; relation to the state, the community, the municipal governing body; functions; organization; methods of work; employment of experts; relation of board to its experts, teachers, pupils; qualifications of board members.
4. The superintendent. — Brief history of school supervision; qualifications, natural and acquired, for success in supervision; the superintendent's appointment, tenure of office, salary; duties, authority, power, responsibilities, opportunities; relations of the superintendent, to the school board, to other city officials, to the public, to supervisors, principals, and teachers, to pupils, to outside educational authorities.
5. Organization and supervision of a city school system. — The local problem of public education, character, scope, factors involved; the curriculum; the school plant, buildings, grounds and equipment; care of plant, janitors and engineers; books and supplies; kinds of schools and departments, — day, evening, special, vacation, kindergarten, elementary, high, trade and technical; force of instruction, — teachers, principals, special teachers and supervisors; the children; hygiene; attendance and attendance officers; finances; records; reports.
6. Organization and supervision of an elementary school. — Function of the elementary school; general plan of organization; the curriculum; the school year, — terms, vacations, and holidays; the school day, — sessions and intermissions; the daily programme, — order and length of exercises, rest and recreation periods; organization and management of a class, — class and departmental teaching; plans of grading and promotion; "discipline"; the individual child *vs.* the organization and machinery of the school; the faculty, — principal, teachers and assistants, their relations and duties.

7. Organization and supervision of a high school. — The function of the high school; relation to schools below and above; adaptation to the needs of pupils and of society; co-education or segregation of sexes; conditions of admission and membership; the curriculum, — extent in length and breadth; the individual pupil's "course," — how and by whom determined; the day's programme, periods and intermissions; examinations, marks, promotion, graduation; school organizations, their influence and control; saving the individual pupil from the machinery of organization; the faculty, principal, heads of departments, teachers, — their functions and relations.
8. Rural school problems. — The curriculum, — its adaptation to local conditions; the plant, — building and equipment, location and surroundings; teachers; organization of the rural school; efficiency through centralization; transportation of pupils; the rural high school; supervision of rural schools.

All the work of the course is treated from the standpoint of those immediately and directly responsible for the promotion of public educational policy through the organization, administration, and supervision of the schools, — that is, largely from the standpoint of the superintendent and the supervising principal. Throughout, these studies will be practical and critical, seeking not merely to explain, but especially to form a just estimate of current policies and practices, and to suggest directions of progress.

The course will consist of lectures, discussions, and written reports. Readings will be suggested and special studies of assigned topics will be required of all candidates for the Summer School Certificate.

This course is accepted as a half-course for a degree in Harvard University. This course and Education 3a may not both be counted for a degree. (See pages 16–19.)

*This class will meet for at least one hour five times a week for six weeks at 11 A.M., in Lawrence I.*

The fee for the course is \$20. (See pages 21–22.)

For further information concerning this course address Dr. FRANK E. SPAULDING, Superintendent of Schools, Newton, Mass.

## S3c. ELEMENTARY SCHOOLS

This course is intended for students who desire a close constructive study of the elementary school, especially of the programme of studies. The point of view is that of the grade teacher, supplemented by that of the principal—the course deals, therefore, with problems of the single school rather than with problems of the school-system. The daily life of the school, as a whole and grade by grade, forms the subject-matter of the course.

The history of the elementary school in the United States is first passed very briefly in review. A short discussion of the function of the elementary school in the light of individual and of social needs then follows. This leads to the consideration of the scope and arrangement of the programme of studies, and this subject, with the topics it suggests, forms the body of the course. Thus, under this general head come such topics as: Buildings and equipment; school hours, recesses; subjects, methods, and materials appropriate to the several grades; special methods in the various subject-groups (as mathematics, language, history); promotions; special classes or schools.

Under the general head of administration, the course treats, among other topics, the following: School hygiene; discipline; teachers' and parents' meetings; the ordering and distribution of materials; preparation of school reports; articulation of elementary and secondary schools; relations of teachers and principals to their colleagues, to the superintendent, and to the community.

The work will consist of lectures, reading, discussions, and a constructive essay. Elementary programmes of study in modern cities will receive analysis and criticism; and each student will develop a scheme for the organization of a single school, with detailed suggestions in a single course. Such visiting as the summer session of schools near the University renders desirable, will form part of the work. Students are requested to bring with them courses of study, syllabi, blank forms, and printed matter of any sort used in their home schools.

This course is accepted as a half-course for a degree in Harvard University. This course and Education 3c may not be counted for a degree. (See pages 16-19.)

*This course will meet for at least one hour five times a week for six weeks at 11 A.M., in Lawrence 12.*

The fee for this course is \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Mr. H. W. HOLMES, 10 Bellevue Ave., Cambridge, Mass.

## S6. FROEBEL'S PHILOSOPHY OF EDUCATION

This course is intended for teachers, social workers, and students interested in the larger issues of educational theory, as well as for kindergartners. The purpose of the course is two-fold: through a study of the doctrines of Froebel it aims to approach some of the philosophical problems involved in educational procedure; and in the light of Froebel's position upon these fundamental questions to examine in turn certain practices of modern education, in elementary schools and in high schools as well as in kindergartens. The period covered by the course is one of radical reconstruction in educational theory. The lectures are in part, therefore, historical, dealing with some of the men and forces of the Romantic Movement which were of especial importance in the establishment of a new educational point of view. The character of the course as a whole, however, is constructive: it endeavors by means of a critical and comparative study of the system of a single educator to aid the student to define his own fundamental attitude toward education, and to test and systematize his opinions upon certain issues of practice. The following topics indicate the scope of the course:

1. The bearing of philosophy upon education.
2. The development of educational doctrine in the early nineteenth century, with reference to the contemporary development of philosophy.
3. The philosophical position and educational principles of Froebel, in the light of Froebel's life and with special reference to his debt to Pestalozzi.
4. Froebel and Herbart.
5. Modern practices in schools and kindergartens, in the light of Froebel's principles.

The work will consist of lectures, reading, and essays, with such observation of practice as the summer session of schools and play-



grounds near the University will permit. The books assigned for reading will be found in the library of the Division of Education. Students may find use, however, for their own histories of philosophy, for modern texts on the theory of education, and for books on Froebel.

This course is accepted as a half-course for a degree in Harvard University. This course and Education 6 may not both be counted for a degree. (See pages 16–19.)

*This course will meet for at least one hour five times a week for six weeks at 9 A.M., in Lawrence 12.*

The fee for this course is \$20. (See pages 21–22.)

For further information concerning this course address the Instructor, Mr. H. W. HOLMES, 10 Bellevue Ave., Cambridge, Mass.

**DESIGN.** (See page 74.)

## ENGINEERING

Engineering Courses 4*a*, 4*b*, 4*c*, 4*d*, 5*b*, 5*e*, and Architecture 5*d*, given at Squam Lake, N. H., and 10*a*, 10*b*, 10*c*, 10*d* (shopwork), given at Cambridge, all intended primarily for students in Harvard College, are open to any qualified men who register in the Summer School.

### ENGINEERING CAMP

HECTOR JAMES HUGHES, A.B., S.B., *Director of the Engineering Camp, and Assistant Professor of Civil Engineering.*

CLIFTON HARLAN PAIGE, B.A.S., *Office Assistant.*

J. C. BARNES, S.B., *Instructor in Mathematics (North Georgia Agricultural College), Field Assistant.*

HORACE UPHAM RANSOM, A.B., *Austin Teaching Fellow in Applied Mechanics.*

And one section assistant for every twelve students.

The Harvard Engineering Camp is situated at the foot of Red Hill, on the eastern shore of Big Squam Lake, New Hampshire; and is about five miles from Lake Winnepesaukee at its nearest point, Centre Harbor. This region is in the foothills of the White Mountains, is very attractive, and has an exceptionally healthful summer climate. The Camp was established in the summer of 1894, at

Martha's Vineyard, Mass.; and was moved to New Hampshire in 1901. The land and buildings are the gifts of several alumni.

The property consists of about seven hundred acres of farm and woodland, so varied in topography as to provide suitable practice ground for all kinds of surveying problems, and has nearly two miles of shore line. The buildings contain offices, lecture and draughting rooms, kitchens, and indoor and outdoor dining rooms. A large draughting room accommodating over one hundred men is fitted with excellent light for evening work. The Camp owns surveying instruments sufficient to furnish each problem with the equipment required in practice.

The Camp provides instruction in surveying under a system of constant supervision, as nearly as possible reproducing the conditions of practice. The work consists of problems which include and illustrate the use of necessary instruments and principles, each problem requiring from one to five days of field and office work. Verbal and written instructions precede each problem. When on duty, 7 A.M. to 4 P.M. daily, the students are divided into small squads, each in immediate charge of an assistant who works with his party. The field work is supplemented by daily inspection of notebooks, maps, and computations, and by frequent field tests and written examinations.

The surveying instruction for engineering students in the University is not given during the college year, but only at the Camp during the summer. The courses given are: Plane Surveying, six weeks; Railroad Surveying, five weeks; and Geodetic Surveying, three weeks. Not more than two of these courses may be taken in one summer. They provide professional training for civil, mechanical, electrical, and mining engineers; landscape architects; geologists; foresters; and other technical men.

A similar system of uninterrupted study is also applied to certain other branches, notably elementary mechanics, such as Statics, Kinematics and Kinetics, and Resistance of Materials, — Engineering 5*b*, 5*e*, and Architecture 5*d*. These courses are given in Cambridge during the college year, and are repeated in the summer at the Camp.

Students intending to enter the Graduate School of Applied Science may make up their deficiencies in many cases by taking

courses at the Camp in the summer previous to their entering the University.

The students and instructors live chiefly in tents having elevated wooden floors. There is accommodation for a limited number of students in one of the buildings. Meals are served in a large, covered piazza, and the food is simple and wholesome. All students must board in the Camp. The Camp duties, although rigorous, are performed chiefly out of doors and under healthful conditions.

The courses described below will be given at the Camp in 1909.

### SURVEYING COURSES

ENGINEERING 4a. Surveying—Use and Adjustment of Instruments, Plane and Topographical Surveying, Levelling, Drawing, and Field Practice. *Six weeks, beginning Thursday, June 24.* Asst. Professor H. J. HUGHES and assistants.

Course 4a is open to students who have studied Plane Trigonometry. It may be counted as one course towards the degree of A.B. or S.B. in Harvard University.

This course comprises the study of the principles of surveying, with field practice, and the use and adjustment of surveying instruments. Beginning with approximate methods, the various kinds of surveys used in engineering work are made under constant supervision, and the results are plotted in the proper form of map or plan, which is an essential part of every problem. The problems include pacing, chain, tape, and stadia measurements; differential and profile levelling; land, road, and shore-line surveys with transit or compass and tape, chain or stadia; plane-table, transit and stadia, and cross-section topographical surveys; simple curves, the determination of position by astronomy, including the use of the sextant; lettering and map drawing; and the first principles of earthwork computation.

*Text-book:* Breed and Hosmer's *The Principles and Practice of Surveying*.

For charges see p. 63.

ENGINEERING 4c hf. Geodetic Surveying. — Field Work of Triangulation. The Use of Astronomical Instruments in Surveying. *Three weeks, beginning Wednesday, July 14.* Professor H. J. HUGHES and assistants.

This course is open to students who have passed satisfactorily in Course 4a and have a knowledge of spherical trigonometry. It may be counted as a half-course towards the degree of A.B. or S.B. in Harvard University.

The course includes instruction in base line measurements, angle observations, adjustments of angle observations and of triangulations, determination of absolute position, trigonometric and precise spirit levelling, the use of the sextant, map making, and theory of least squares.

*Text-book:* Crandall's *Geodesy and Least Squares*.

For charges, see page 63.

ENGINEERING 4d. Railroad Engineering (first course). — Surveys for the Location of Railroads. Railroad Curves. Earthwork Computation. Field Practice. *Five weeks, beginning Wednesday, August 4.* Asst. Professor H. J. HUGHES and assistants.

Course 4d is open to students who have passed satisfactorily in Course 4a or its equivalent. It may be counted as one course towards the degree of A.B. or S.B. in Harvard University.

This course comprises the study of simple, compound, transition, and vertical curves, earthwork computation, track construction, and the first principles which determine alignment and grade; and field work and map making for railroad surveys.

The principal field work consists in laying out curves, and the location of a line about eight miles long. In this work every student is required to perform all the steps in making the preliminary surveys, office location and profiles, and the final location, in staking out the line, and in making the necessary studies and earthwork computations, and estimates of cost.

The course is designed to give instruction in the engineering both of railroad construction and maintenance.

*Text-book:* Allen's *Railroad Curves and Earthwork*.

For charges see p. 63.

## COURSES IN MECHANICS

ENGINEERING 5b hf. Elementary Statics. — Graphic and Algebraic Methods. *Three weeks, beginning June 24.* Mr. H. U. RANSOM.

Course 5b is open to students who have passed satisfactorily in Course 1b or an equivalent. It may be counted as a half-course towards the degree of A.B. or S.B.

This course is devoted to the study of Statics with special reference to a thorough grounding in the fundamental principles.

The instruction includes lectures, the solution of selected and graded problems (drawn mainly from engineering practice), and regular conferences between instructor and students.

Algebraic and graphic methods are developed with equal thoroughness, and, in general, each problem is solved by both methods.

The problems of the course include the investigation of the stability of structures, and the calculation of stresses in simple trusses and structures.

*Text-book:* Johnson's *Statics by Algebraic and Graphic Methods*.

For charges, see page 63.

ENGINEERING *5e hf.* Elementary Kinematics and Kinetics and problems in Statics. *Three weeks, beginning July 14.* Mr. H. U. RANSOM.

Course *5e* is open to students who have passed satisfactorily in Course *5b* or an equivalent, and in the first half of Course *1c* or an equivalent. It cannot be taken by a student who takes or has taken Mathematics 4. It may be counted as a half-course towards the degree of A.B. or S.B. in Harvard University.

This course is devoted to the treatment of the fundamentals of Kinematics and Kinetics. The instruction includes occasional lectures, with a large amount of problem work and regular conferences between instructor and students.

For charges, see page 63.

ARCHITECTURE *5d hf.* (formerly Engineering *5d*). Resistance of Materials. — Elementary Structural Design. *Three weeks, beginning July 14.* Mr. H. U. RANSOM.

This course is open to students who have passed satisfactorily in Engineering *5b*. It may be counted as a half-course towards the degree of A.B. or S.B. in Harvard University. It is a course on construction in continuation of Engineering *5b*. The instruction includes lectures and conferences and the solution of selected and graded problems, such as occur in architectural practice. It includes practice in the application of Statics to some of the more important types of structure.



After a brief exposition of the fundamental principles of Resistance of Materials, the work of the course is directed towards practice in the application of these principles to the simple problems constantly met in structural practice. Each student is required to solve a large number of problems in such a way as to encourage habits of speed and correctness in computation as well as to gain familiarity with the subject. These problems involve the prominent features of the design of wooden and steel beams, girders, footings, columns, and wooden and combination roof trusses.

*Reference books:* Johnson's *Materials of Construction*; Freitag's *Architectural Engineering*; steel manufacturer's handbooks.

Each course requires a student's whole time for the number of weeks specified. In one summer, however, a student may take in sequence, provided he is properly qualified in each case, two or three courses, in groups as follows: (1) 4*a* and 4*d*; (2) 5*b* and 5*e*; (3) 5*b* and 5*d*; (4) 5*b* and 4*c*; (5) 5*b*, 5*e*, and 4*d*; (6) 5*b*, 5*d*, and 4*d*; (7) 5*b*, 4*c*, and 4*d*. Each of groups 1, 5, 6, and 7 counts as two courses; each of groups 2, 3, and 4 counts as one course.

### *Charges*

The *total charges*, including board, tuition, and laboratory fees, for students who have not been registered under the Faculty of Arts and Sciences and have not paid a full year's tuition for 1908-09, will be as follows:—

Engineering 4 <i>a</i> ,	. . . . .	\$80
“ 4 <i>d</i> ,	. . . . .	70
“ 4 <i>c</i> ,	. . . . .	40
“ 5 <i>b</i> ,	. . . . .	45
“ 5 <i>e</i> ,	. . . . .	45
Architecture 5 <i>d</i> ,	. . . . .	45

For students who have paid a full year's tuition for the college year immediately previous to the summer's residence at the Camp, the charge is \$20 less for 4*a* or 4*d*, and \$10 less for 4*c*; but no deduction is made for Engineering 5*b*, 5*e*, or Architecture 5*d*. Students who pay the above *total charges* and who enter the Graduate School of Applied Science and pay a full year's tuition for the College year immediately succeeding their summer's residence at

the Camp may have refunded \$20 each for 4a or 4d or \$10 for 4c at the end of the College year.

Students intending to take courses at the Camp should communicate with Professor H. J. HUGHES, 114 Pierce Hall, Cambridge, Mass.

## **The Engineering Courses described below will be given at Cambridge in 1909**

### **SHOPWORK COURSES**

Four shopwork courses will be given in Cambridge, at the Rindge Manual Training School on Irving Street, consisting of practice in the blacksmith shop, pattern shop, and machine shop, supplemented by lectures and by visits to manufacturing establishments in the vicinity of Cambridge.

The courses are given in the summer by the Division of Engineering for regular students in Harvard University; but they may be taken by other competent students who register in the Summer School.

These courses are intended to give students a knowledge of the materials and methods of manufacture adapted to the different engineering requirements, so that they may be able to make practical and economical designs of machinery.

The courses are intended primarily for students in Engineering. They are entitled Engineering 10a, 10b, 10c and 10e.

**10a. Chipping, Filing, and Fitting.** — Use of hand tools. — Fitting by hand. — Study of the metals in practical working. — Lectures and laboratory work. *Ninety hours, from about June 14 to July 10.* Mr. E. R. MARKHAM.

**10b. Blacksmithing.** — Use of tools. — Forging, welding, tool-dressing and tempering. — Lectures and laboratory work. *Ninety hours, from about June 14 to July 10.* Mr. E. R. MARKHAM.

**10c. Pattern Making and Foundry Practice.** — Use of wood-working tools. — Casting in iron and alloys. — Lectures and laboratory work. *Ninety hours, from about July 12 to August 17.* Mr. E. R. MARKHAM.

**10e. Machine-Shop Practice.** — Use of machine tools. — Construction of parts of machinery, finishing and assembling parts. —

Lectures and laboratory work. *Ninety hours, from about July 12 to August 17.* Mr. E. R. MARKHAM.

☞ All four of these courses may be taken in one summer. They may be counted together as one and a half courses for the degree of S.B. in Harvard College. They cannot be counted for the degree of A.B.

The fee will be \$25 for each course for persons not registered in Harvard University.

For further information concerning these courses, address Professor F. L. KENNEDY, Pierce Hall, Cambridge, Mass.

## ENGLISH

CHARLES TOWNSEND COPELAND, A.B., *Instructor in English and Lecturer on English Literature.*

HENRY BARRETT HUNTINGTON, Ph.D., *Assistant Professor of English (Brown University).*

ALBERT ELMER HANCOCK, Ph.D., *Associate Professor of English (Haverford College).*

JAMES WALTER RANKIN, A.M., *Graduate Student, formerly Instructor in English, Simmons College.*

HENRY MILNER RIDEOUT, A.B., *formerly Instructor in English, Author.*

EBER CARLE PERROW, Ph.D., *Assistant Professor of English (University of Mississippi).*

HENRY ROBINSON SHIPHERD, A.B., *formerly Assistant in English (Francis W. Parker School, Chicago).*

The courses in English will begin Wednesday, July 7, and end Wednesday, August 18, 1909.

☞ The attention of students in English is called to the courses in Public Speaking, especially to Course 4 on "Oral Reading of English Classics." (See page 139.)

## COMPOSITION

### SA. ELEMENTARY COURSE

This course is similar to the course in rhetoric and composition prescribed for Freshmen in Harvard College. Its objects are chiefly these: to teach, through practice in theme-writing, correctness and

facility in the use of English; to study, in lectures and conferences, the theory of English composition, so far as such study may be helpful in practice; and to make clear through all these means the methods of teaching English composition employed at Harvard College.

The following text-books will be used in the course: Gardiner, Kittredge, and Arnold, *Manual of Composition and Rhetoric* (1907); Wendell, *English Composition* (1895); Nutter, Hersey, and Greenough, *Specimens of Prose Composition* (1907); Hill, *Principles of Rhetoric* (revised and enlarged edition).

Those who wish to enter this course should be able to use the English language with as much intelligence and correctness as may fairly be expected of the graduates of a good high school or academy. Persons who are fitting themselves for the course are advised to increase their knowledge of English in every possible way, and particularly to write frequent compositions and to read good books.

This course, together with the course on English Literature from Anglo-Saxon times to the present, may be counted as the equivalent of English A (a full course) toward the degree of A.B. or S.B. in Harvard University. It is not expected, however, that the two courses will be taken the same year. (See page 16.)

Two hours will be spent in the class-room at each session.

*The class will meet five times a week at 9 A.M., in Sever 6.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Mr. H. R. SHIPHERD, 1718 York Place, Chicago, Ill.

### SB. ADVANCED COURSE

This course is intended for those who have already completed the work of the elementary course or its equivalent, or who satisfy the instructor of their fitness to take the course. The work consists of discussions of various matters connected with the art of English composition; of two distinct kinds of practice in writing, (1) daily themes, (2) long themes; and of detailed criticism of these themes before the class.

The object of the daily theme, which is limited to one page of theme-paper, is to cultivate observation, and conciseness and ease

of expression. The object of the long theme is to cultivate clearness and method in thought, and correctness, ease, and vigor in expression, by practice in three kinds of writing, — Exposition, Description, and Narration.

Two hours will be spent in the class-room at each session of the class. The time will be divided between lectures, accompanied by discussions of themes before the class, and personal conferences.

The text-books used will be Professor A. S. HILL's *Principles of Rhetoric* (the revised and enlarged edition), and Professor BARRETT WENDELL's *English Composition*.

In this course, as in the elementary course, teachers will have an opportunity to study the methods of teaching composition employed in Harvard College. A half-hour each day will be devoted to a practical method for secondary schools.

This course, together with the course on English Literature from Anglo-Saxon times to the present, may be counted as the equivalent of English A (a full course) toward the degree of A.B. or S.B. in Harvard University. It is not expected, however, that the two courses will ordinarily be taken the same year. (See page 16.)

*The class will meet for two hours five times a week at 9 A.M., in Sever 1.*

Fee, \$20. (See pages 21–22.)

For further information address the Instructor, Professor A. E. HANCOCK, Haverford College, Haverford, Pa.

#### SC. SECOND ADVANCED COURSE

This course is open to those who present a certificate that they have completed *English B, Advanced Course*, of the Summer School, and to others who seem to the instructor sufficiently advanced in the study and practice of writing.

The work will consist of a short theme daily, and of six or more longer themes: the former to cover not more than one page of theme-paper; the latter not less than three pages nor more than six. During the first half of the course, the long themes will deal with unconnected topics; during the second half, they may develop continuously a single topic. Both the daily and the long themes are intended to afford, as far as possible, the conditions most favorable to the development of individuality in thought and expression.



This course, together with the course on English Literature from Anglo-Saxon times to the present, may be counted as the equivalent of English *A* (a full course) toward the degree of A.B. or S.B. in Harvard University. It is not expected, however, that the two courses will be taken the same year. (See page 16.)

*The class will meet for two hours five times a week at 9 A.M., in Sever 2.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Mr. H. M. RIDEOUT, 3 Mountfort Street, Boston, Mass.

#### SD. ARGUMENTATION

This course is intended for persons who teach or intend to teach Argument in colleges or high schools. By lectures and exercises it will develop the principles of Argument, will provide practice, under criticism, in applying these principles, and will discuss methods of handling with classes both oral and written Argument.

This course, together with the course on English Literature from Anglo-Saxon times to the present, may be counted as the equivalent of English *A* (a full course) toward the degree of A.B. or S.B. in Harvard University. It is not expected, however, that the two courses will be taken the same year. (See page 16.)

The text-book used will be *The Principles of Argumentation* (revised edition), Ginn & Co.

*The class will meet for two hours five times a week at 9 A.M., in Sever 5.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Professor H. B. HUNTINGTON, Brown University, Providence, R. I.

#### LANGUAGE AND LITERATURE

##### *College Admission Requirements in English*

The work of this course will comprise (1) a careful reading of books selected from those assigned for 1910 and 1911, with particular reference to methods of teaching them in schools, (2) a systematic study of the principles of composition which candidates for admission to college are expected to know, and of the various effective methods of presenting them to students, (3) practice in applying

these principles in composition. In subject-matter presented, in methods of procedure used in the class-room, and in opportunities afforded for writing under criticism, the course, it is hoped, will be of especial value to teachers of English in secondary schools.

The books will be in general classified for study as follows:—

1. Merchant of Venice, Julius Caesar, and Macbeth.
2. Comus, L'Allegro, Il Penseroso, Lycidas, and Pilgrim's Progress (Part I).
3. The Sir Roger de Coverley Papers, Golden Treasury (Books II and III), Goldsmith's Deserted Village, Macaulay's Johnson, Burke's Conciliation with America, Franklin's Autobiography, Washington's Farewell Address.
4. Byron's Prisoner of Chillon and Mazeppa, Scott's Lady of the Lake, Macaulay's Lays of Ancient Rome, Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur.
5. Irving's Sketch Book, Ivanhoe, Carlyle's Heroes and Hero Worship, The House of Seven Gables, Tale of Two Cities, and Silas Marner.

The purpose will be to study the subject-matter of the books as thoroughly as may be found necessary, to consider briefly their relation to other pieces of literature, and to go sufficiently into detail concerning the time of each author and the conditions under which he wrote, to give an intelligent interest in what is read.

The books prescribed for study will be read with sufficient care to acquire a knowledge of their substance, structure and style. The books prescribed for reading will be considered, not only as a means of stimulating appreciation of literature, but also in their relation to the study of the principles of composition. In short daily themes the members of the course will be asked to record impressions which they obtain in the course of the reading or to express their opinions on topics suggested by the instructor, and in longer weekly themes they will be expected to give the results of more extended thinking and study. The criticisms upon the themes, the discussions concerning them before the class and in personal conferences, and the instruction in composition, though adapted as far as possible to the actual needs of those taking the course, will in general aim merely to teach the methods of simple, direct, and accurate expression.

The text-books used in the course will be H. G. Pearson, *Principles of Composition*; *The Golden Treasury*; Rolfe's edition of *Julius Caesar* and *Macbeth*; and *A Report on the Examinations in English for Admission to Harvard College*, a pamphlet to be obtained of the Harvard Coöperative Society. It is desirable that as many of the books as possible should be read before taking the course.

*The class will meet for two hours five times a week at 11 A.M., in Sever 5.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Professor H. B. HUNTINGTON, Brown University, Providence, R. I.

#### *English Literature from Anglo-Saxon times to the Present*

This course will be an introduction to the study of English literature in detail. The lectures will deal with the national culture of England and with the significant writers in each epoch. The minor writers will be treated by reference to a text-book and by supplementary comment. The class will read representative works of each period, such as Beowulf, Chaucer's *Canterbury Tales*, Marlowe's *Tamburlaine*, Fielding's *Tom Jones*, Byron's *Childe Harold*, Carlyle's *Heroes and Hero Worship*, Tennyson's *Idylls of the King*. A large list of titles, arranged in groups, will be given; from these groups the student may make selections suitable to his needs.

This course, together with one of the composition courses, SA, SB, SC, or SD, may be counted as the equivalent of English A (a full course) toward the degree of A.B. or S.B. in Harvard University. It is not expected, however, that the two courses will be taken the same year. (See page 16.)

*The class will meet five times a week for six weeks at 11 A.M., in Sever 1.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Professor A. E. HANCOCK, Haverford College, Haverford, Pa.

#### *Anglo-Saxon*

This course requires no previous knowledge of Anglo-Saxon. Intended both for teachers of English in schools and for students in college, it undertakes to provide them with a foundation for

more thorough work in the English language and English literature. With this end in view, the attempt is made to show clearly the relation of Anglo-Saxon to modern English, as well as to consider carefully the grammatical forms and the syntax of the language in the early period. The selections read, comprising both prose and poetry, are studied also from a literary point of view, and lectures are given on Anglo-Saxon literature. At the end of the course, students should be able to read ordinary Anglo-Saxon prose readily at sight. The text-book used is Bright's *Anglo-Saxon Reader*.

This course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. This course and English 3a may not both be counted for a degree. (See page 16.)

*The class will meet for an hour and a half five times a week at 9 A.M., in Sever 9.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Mr. J. W. RANKIN, 14 Sumner Road, Cambridge, Mass.

### *Chaucer*

In this course the greater number of the Canterbury Tales will be studied, with due attention to language, metre, and interpretation. There will also be lectures on Chaucer's life and work, and the literary history of England in his time.

This course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. Students who have been credited with English 1 may not count this course for a degree; and students who are credited with this course and afterwards take English 1 may be credited only a half-course for the latter. (See page 16.)

*The class will meet for an hour and a half five times a week at 9 A.M. in Sever 19.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Professor E. C. PERROW (University of Mississippi).

### *Shakspeare*

In this course three plays will be studied in detail. There will also be lectures on Shakspeare's life and work, and on the conditions of the English drama in his time.

This course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. Students in this course who take English 2 as given in 1909-10, may count the latter as a half-course only. (See page 16.)

*The class will meet for an hour and a half five times a week at 11 A.M., in Sever 6.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Professor E. C. PERROW, University of Mississippi, University, Miss.

### *English Literature of the Eighteenth Century*

The main purpose of this course is to give students a general acquaintance with the lives and the works of the chief writers of the period treated, and with their position in literary history. A large amount of reading is prescribed, a still larger amount is recommended, and written work is called for. Students are encouraged (1) to form opinions of their own about what they read; and (2) to express their opinions with intelligence, precision, and brevity. The course is intended to furnish a basis for systematic study after students have left the Summer School.

*The class will meet for an hour and a half five times a week at 11 A.M., in Sever 2.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Mr. H. M. RIDEOUT, 3 Mountfort Street, Boston, Mass.

### *English Literature of the Nineteenth Century — from the publication of the Lyrical Ballads to the Death of Tennyson (1798-1892)*

This course deals with the romantic revival at the beginning of the century, with the forces, social and political, which brought it about, and with the principal tendencies that have been manifested in literature since then. Attention will be centred chiefly on English writers of the first three-quarters of the century. Among these may be named Wordsworth, Coleridge, Shelley, Byron, Keats, De Quincey, Miss Austen, Scott, Newman, Carlyle, Ruskin, Tennyson, Browning, Matthew Arnold, Dickens, Thackeray, George Eliot, and George Meredith.



*The class will meet for an hour and a half five times a week at 11 A.M., in Emerson D.*

Fee, \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Mr. C. T. COPELAND, 15 Hollis Hall, Cambridge, Mass.

**ELOCUTION.** (See page 136.)

**ETHICS.** (See page 111.)

### THE FINE ARTS

DENMAN WALDO ROSS, Ph.D., *Lecturer on the Theory of Design.*

GEORGE HENRY CHASE, Ph.D., *Assistant Professor of Classical Archaeology, and Curator of Classical Antiquities.*

WILLIAM LUTHER MOWLL, S.B., *Assistant Professor of Architecture.*

MARTIN MOWER, *Instructor in Fine Arts.*

EDGAR OSCAR PARKER, *Assistant in Drawing.*

Six courses in the Fine Arts will be given in 1909, beginning July 7, and ending August 18. There will be a lecture course on *Drawing and Painting*, a practice course in *Pure Design*, a practice course in *Painting in Representation*, a course on the *History of Ancient Art*, a course on *Roman and Etruscan Art*, and a course on *Architectural Design*.

These courses are described below.

### COURSES ON DRAWING AND PAINTING

#### S7. LECTURE COURSE ON DRAWING AND PAINTING

Dr. Ross will give a course of twenty-four lectures on Drawing and Painting; covering the ground of Pure Design and of Representation. The following subjects will be discussed: —

Tones and Tone-Relations. Values, colors, color-intensity and color-neutralization. Order in Tone-Relations. Tone Harmony. Tone Balance. Tone Rhythm. Pigment materials and mixtures. Tone Sequences. The preparation of the palette.

Positions, directions, distances, and intervals. Measures and shapes of lines and of areas. Line and area composition, following the principles of Harmony, Balance, and Rhythm.

The study and practice of Design. Analysis of examples. How the principles of Pure Design have been applied in different Arts and Crafts: in Gymnastics, in Dancing, in Music, in Speech, in Construction, in Modelling, in Carving, in Drawing and Painting. The motives of Pure Design and the motives of Utility. How they work together.

Consideration of examples: Peruvian, Coptic, Chinese and European tapestries, Oriental carpets, Persian, Japanese, and European textiles.

The Principles of Order as observed in Nature. Nature the principal source of suggestion for the designer. Methods of study.

Representation. Object: to achieve the Truth of Representation. The different ways or modes of Representation. Representation with and without Perspective. Representation in outlines; in outlines and flat tones, and in different degrees of relief. The achievement of effects of light and shade. The use of tone-sequences.

Analysis of historic examples. Egyptian painting. Greek painting, as illustrated in Greek vases. Considerations of Chinese, Japanese, and Persian work. The development of painting in Italy during the Middle Ages and the Renaissance. The great masters of the Renaissance.

How the motives of Pure Design and of Representation work together, producing Representation in forms of Design. The analogy of Poetry. Painting as a Fine Art.

Methods of study and methods of teaching.

These lectures are intended for students, for professional designers and painters, for teachers of drawing and painting, and for teachers of the History of Art.

The lectures will be given in the lecture-room of Robinson Hall, the building of the Department of Architecture; on Tuesdays, Wednesdays, Thursdays, and Fridays, at ten o'clock.

*For the conditions for counting this course for a degree see below.*

Fee for the lectures alone, \$20. (See pages 21-22.)

#### S7a. PRACTICE IN PURE DESIGN

In connection with the course of lectures, above described, a course of exercises and technical training in Pure Design will be given for those who desire some practice in designing and some technical understanding of the subject. Various problems will be

given. Illustrations of the principles of Design will be produced. The work done will be more or less advanced according to the proficiency of the individual student. This course will be conducted by Dr. ROSS, assisted by Mr. PARKER.

*For the conditions for counting this course for a degree see below.*

This course may be taken only by those taking the lecture course.

Fee, including the lectures, \$30. (See pages 21-22.)

## S206. TECHNICAL TRAINING IN REPRESENTATION

There will be given, also, a course of technical training in the different modes of Representation. The object will be to give the student an idea of the limitations of different modes of Drawing and Painting. There will be experiments in imaginative composition, in the mode of outline, in outlines with flat tones and in the different modes of relief and of chiaroscuro. In drawing and painting from Nature different points of view will be carefully distinguished. Particular attention will be given to the study of pigments and pigment mixtures, and to the use of tone-sequences. The object of the course, however, will be appreciation rather than proficiency, understanding rather than achievement. This course will be conducted by Mr. MOWER, in consultation with Dr. ROSS.

*For the conditions for counting this course for a degree see below.*

This course may be taken only by those taking the lecture course.

Fee, including the lectures, \$30. (See pp. 21-22.)

Beyond the time given to the lectures at least eighteen hours a week should be devoted to the study of examples and to the exercises prescribed in the practice courses. The work may be done at Robinson Hall, or at home, as the student may prefer. The instructors will be in attendance, except on Saturdays.

No one will be allowed to take, in connection with the lectures, more than one of the practice courses, and no one will be allowed to take either of the practice courses without attending the lectures, which are introductory and explanatory.

Students may take the lectures without taking the practice course in Design or the practice course in Representation, but the Summer School Certificate will be given only to those who pass a written examination on the lectures and do satisfactory work in one or the other of the practice courses. The same rule applies to students of

the University who wish to take a half-course counting for the A.B. degree. (See p. 16.)

The combination of Courses S7 and S7*a* is equivalent to Architecture 7; the combination of Courses S7 and S20*b* to Architecture 20*b*. (See the winter schedule of courses for 1908-09.) No credit will be given to the student for a course which he has counted in term-time (See p. 16).

The fee for the lectures alone is \$20, and for the lectures combined with either of the above described courses of technical training is \$30. (See pp. 21-22.)

For information in regard to lodgings, expenses, reduced railway fares, etc., address the Chairman of the Summer School, Professor J. L. LOVE, 4 Lawrence Hall, Cambridge, Mass.

Dr. Ross's address is 24 Craigie St., Cambridge, Mass.

### S3. THE HISTORY OF ANCIENT ART: CLASSICAL ARCHAEOLOGY

The purpose of this course is to present very briefly the history of the development of architecture, sculpture, and painting, and to some extent the lesser arts, from the earliest period to the downfall of the ancient civilization. Attention will be directed mainly to the Greek period, but the history of art in Egypt and Assyria and the pre-historic "Mycenaean" civilization will be briefly discussed, and the final lectures will be devoted to a consideration of the later development of Greek art during the Hellenistic and Roman periods.

The course will be helpful to teachers and students of the classics, of the history of art, and of the theory of design.

The course will be conducted by means of lectures illustrated with the stereopticon, supplemented by reading, conferences, and the study of photographs and casts. The necessary books will be reserved in the University Library, and the large collection of photographs and casts in the Fogg Museum of Art will be at the disposal of the members of the class.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is the equivalent, in part, of Fine Arts 3 of the Harvard Courses of Instruction. This course and Fine Arts 3 may not both be counted for a degree. (See page 16.)

*The class will meet for at least one hour five times a week for six weeks at 11 A.M., in the Fogg Lecture Room.*

The fee for the course is \$25. (See pages 21-22.)

For further information about this course, address the Instructor, Professor GEORGE H. CHASE, 11 Kirkland Road, Cambridge, Mass.

#### S5. ETRUSCAN AND ROMAN ART: CLASSICAL ARCHAEOLOGY

The purpose of this course is to trace historically the development of art in Italy, especially during the period of the Roman domination. During the first two weeks, the early prehistoric civilization will be discussed very briefly; then the rise and development of Etruscan art, its relation to Greek art, and the influence of Etruria on Rome will be treated somewhat more fully; and in the last four weeks the different branches of Roman art (architecture, sculpture, painting, etc.) will be systematically considered.

The course will be conducted by means of lectures, supplemented by reading, conferences, and the use of photographs. The necessary books will be reserved in the University Library, and the large collection of photographs in the Fogg Museum of Art will be at the disposal of the members of the class.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is the equivalent, in part, of Classical Philology 64*b* of the Harvard Courses of Instruction. This course and Classical Philology 64*b* may not both be counted for a degree. (See page 16.)

*The class will meet for at least one hour five times a week for six weeks, at 9 A.M. in Sever 25.*

The fee for the course is \$25. (See pp. 21-22.)

For further information about this course, address the Instructor, Professor GEORGE H. CHASE, 11 Kirkland Road, Cambridge, Mass.

#### S4. ARCHITECTURAL DESIGN

This is a course in architectural design conducted by means of problems and criticisms, as are the Courses 4*a*, 4*b*, and 4*c* in the regular term. This course cannot be counted for a degree, taken by itself, but credit will be given, in connection with the regular courses Architecture 4*a*, 4*b*, and 4*c*, for work successfully performed in this course in the summer.

There will be opportunity provided to complete *two long problems and three sketch problems*; there will be criticisms as frequently as needed.



For those who desire a more extended course, opportunity will be given, beginning June 1, to do *two more long problems and other sketch problems*, in addition to those named above. Such problems successfully completed will count towards the work of the regular Courses 4a, 4b, and 4c. This longer course will extend to September 4.

The fee for the short course is \$25; for the long course, \$45. (See pages 21-22.)

For further information address Professor WILLIAM L. MOWLL, 40 Avon Hill St., Cambridge, Mass.

---

**FRENCH.** (See page 141.)

**FRENCH CONVERSATION.** (See page 142.)

---

### GEOLOGY AND GEOGRAPHY

WILLIAM MORRIS DAVIS, M.E., S.D., Ph.D., *Sturgis-Hooper Professor of Geology*.

JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography and Mineralogy, and Curator of the Mineralogical Museum*.

JAY BACKUS WOODWORTH, S.B., *Assistant Professor of Geology*.

DOUGLAS WILSON JOHNSON, S.B., Ph.D., *Assistant Professor of Physiography*.

GEORGE ROGERS MANSFIELD, Ph.D., *Assistant Professor of Geology (Northwestern University)*.

Several advanced summer courses given under the direction of the Department of Geology and Geography are offered in the summer of 1909. None of these courses are given in Cambridge and none are open to women. Courses S4 and S4, when given, and Course S5 count as the equivalents of Courses A, 4 and 5 given in term-time. For the counting of the courses in this list for advanced work, see statements below. Courses S4 and S4 are designed for beginners. Course S5 is intended for those who have an elementary knowledge of geology. The courses of research grouped under the number S20 provide work suitable for candidates for the masters' or doctors' degrees.

## ELEMENTARY COURSES IN GEOLOGY AND GEOGRAPHY

[S4. A half-course in Dynamical and Structural Geology; conducted in Cambridge; equivalent to Course 4. Omitted in 1909.]

[S4. Elementary course in Physical Geography. Omitted in 1909.]

## GENERAL FIELD GEOLOGY

S5. A half-course in Field Work in Historical and Structural Geology; conducted in the Rocky Mountains of Montana. *Six days a week for five weeks.* Asst. Professor G. R. MANSFIELD.

Course S5 when conducted in a fossiliferous region is designed to count as the equivalent of Course 5. It is accepted as a half-course towards the degree of A.B. or S.B., and, under special circumstances, with the approval of the Division of Geology and of the appropriate Administrative Board, for the degrees of A.M. and S.M. (in Geology) by students who have taken Geology 5; but students who have passed in Course S5 cannot afterwards count Course 5 in term-time.

The fee for this course is \$22, including the registration fee, which sum should be paid to the Bursar of Harvard University, Mr. CHARLES F. MASON, Dane Hall, Cambridge, Mass., on or before enrolment.

In the summer of 1909 it is proposed to conduct this course in Montana, near Bozeman. The estimated cost of the trip for five weeks out and back from the field rendezvous is \$75 (in 1907, it was \$61). The expense of the journey, including the five weeks in camp and travelling expenses from Boston to the field and return, is estimated at \$250.

The party will assemble early in July, at Bozeman, Montana, where the field equipment may be procured.

Members of this course will register on blanks provided by the instructor when the class meets at the field rendezvous; and such students will be listed as members of the Summer School of Arts and Sciences.

Persons proposing to join this party and desiring further information should address Professor GEORGE R. MANSFIELD, 2242 Ridge Ave., Evanston, Ill., and make known their determination to take the course by June 15.

For scholarship aid available for this course, see statement below.

## COURSES IN FIELD INVESTIGATION

The courses in geology and geography or physiography described below are open to a limited number of men qualified to undertake advanced work. If pursued for five weeks, six days a week, the work in any one of these courses is accepted as a half-course towards the degree of A.B. or S.B.; and, under special conditions, with the approval of the Division of Geology and of the appropriate Administrative Board, towards the degrees of A.M. and S.M. They provide work suitable also for candidates for the degree of Ph.D. or S.D. If followed for ten weeks, six days a week, any one of these courses is accepted as a whole course in the same manner. The work in these courses may be personally supervised by the instructor in the field, conducted by occasional visits to the field in which the student is engaged, or carried on by correspondence. These courses provide research work of a grade equivalent to that provided in the research courses of the regular winter term.

A registration fee of \$2 for each course is payable to the Bursar of the University, Mr. CHARLES F. MASON, Dane Hall, Cambridge, Mass., on registration. See statement below concerning the J. D. WHITNEY Scholarship.

## S20a. PHYSIOGRAPHIC FIELD INVESTIGATION

*Section A.* Physiographic field investigation. Professor DAVIS. For information concerning this course address Professor W. M. DAVIS, 17 Francis Ave., Cambridge, Mass., not later than June 1.

Registration fee, \$2. (See pages 21-22.)

*Section B.* Physiographic studies in New England or Ohio. Asst. Professor JOHNSON. This course is open only to those who have passed in Geology 4 and 6 or 7, given in Harvard University, or who have had equivalent preparation. For information address Professor D. W. JOHNSON, 56 Wendell Street, Cambridge, Mass., on or before June 1.

Registration fee, \$2. (See pages 21-22.)

## S20c. GEOLOGIC FIELD INVESTIGATION

*Section A.* Geological and petrographical field studies. Professor WOLFF. For information concerning this course, address Professor J. E. WOLFF, University Museum, Cambridge, Mass., not later than June 1.

Registration fee, \$2. (See pages 21-22.)

*Section B.* Stratigraphic or glacial field work. Asst. Professor WOODWORTH. For information address Professor J. B. WOODWORTH, Room 24, Geological Museum, Cambridge, Mass., not later than June 1.

Registration fee, \$2. (See pages 21-22.)

#### THE J. D. WHITNEY SCHOLARSHIP

One travelling scholarship of \$200 (which may be divided into two scholarships of \$100 each) is provided by the Josiah Dwight Whitney Fund for meritorious students of geology and geography, preferably for work in the Rocky Mountains. The applicants must be men students not professionally engaged or permanently placed as teachers of geography or geology. Applications with credentials, stating age, previous training, and the preference of the candidate for future work, should be mailed to Professor J. E. WOLFF, Chairman of the Committee on the J. D. Whitney Scholarship, Geological Museum, Harvard University, Cambridge, Mass., on or before June 1, 1909. The award of this scholarship is made by the President and Fellows of Harvard University upon the recommendation of a sub-committee of the Department of Geology and Geography.

The following Whitney Scholars have been appointed: S. A. Starratt and W. F. Low, field-work in Montana, 1905; Herbert Eugene Merwin, field-work in Vermont, 1906; Frederick Henry Lahee, field-work in Montana, 1907; G. B. Roorbach and Sedgwick Smith, field-work in Montana, 1908.

---

The programme of the Division of Geology, giving an account of the instruction in geology, palaeontology, economic geology, meteorology, climatology, physical geography, mineralogy and petrography, will be sent on application to the Publication Office, Harvard University, Cambridge, Mass.

## GERMAN

HERMANN JULIUS WEBER, Ph.D., *Instructor in German.*

ALBERT WILHELM BOESCHE, Ph.D., *Instructor in German.*

Four courses will be given in 1909. The courses will begin on Wednesday, July 7, and end on Wednesday, August 18, 1909.

### S1. GERMAN GRAMMAR AND COMPOSITION. METHODS OF TEACHING, AND THE EQUIPMENT OF A TEACHER OF GERMAN

This course combines a thorough study of German grammar with constant attention to the needs of teachers of German. A knowledge of the elements of German is presupposed. An important part of the work will be the treatment of difficult topics in grammar, especially syntax, and the discussion of the most practical ways of presenting such matters to the pupils. Composition exercises, methodically graded and specially adapted to the needs of this course, are to be done outside of the class and will be corrected and discussed by the instructor.

Among the subjects treated in the lectures and discussions are the following: The advantages and disadvantages of the natural method and its use in connection with systematic grammatical instruction; the standard pronunciation of German and the value of the phonetic method in acquiring and teaching it; the disciplinary and practical value of reading aloud, of translation from and into German; the teacher's helps and sources of information, such as grammars, special treatises on pronunciation, orthography, syntax, general and special dictionaries, general and special works on literature, important periodicals, charts, maps, pictures, etc.

German conversation as a practical demonstration of the principles discussed will form a part of this course, but those students who desire special training in conversation are urged to take the course in conversation described below.

The course is so arranged that it may be taken with profit in two successive years.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 16.)



*The class will meet five times a week for six weeks at 9 A.M., in Sever 17.*

The fee for this course is \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Dr. A. W. BOESCHE, 322 Harvard Street, Cambridge, Mass.

## S2. GERMAN CONVERSATION

This course consists wholly of practice in conversation. It does not presuppose more than an elementary knowledge of German. A manual of German conversation will be used, and the students will be expected to acquaint themselves beforehand with the material to be used each day. No further preparation will be required, but the instructor will suggest ways of supplementing the class-room exercises by outside work.

*This class will meet five times a week for six weeks at 11 A.M., in Sever 17.*

The fee for this course is \$20; but if taken with either of the other courses in German, the fee is \$30 for the two courses. (See pages 21-22.)

For further information address the Instructor, Dr. A. W. BOESCHE, 322 Harvard Street, Cambridge, Mass.

## S3. GERMAN DRAMATISTS OF THE NINETEENTH CENTURY

This course is suited to the requirements of students who possess a fair reading knowledge of German. It is primarily intended to meet the needs of teachers in service and of those preparing to teach. The selection of plays to be read differs from that in 1908. It is proposed to read in class, or to assign for outside reading, the following plays: Kleist, *Der Zerbrochene Krug*; Grillparzer, *Das Goldene Vliess*, *König Ottokars Glück und Ende*; Hebbel, *Agnes Bernauer*; Ludwig, *Die Makkabäer*; Gutzkow, *Zopf und Schwert*; Wildenbruch, *Harold*; Wilbrandt, *Der Meister von Palmyra*; Sudermann, *Johannes, Es lebe das Leben*; Hauptmann, *Der Biberpelz*; Hofmannsthal, *Der Tor und der Tod*.

The reading will be supplemented by the discussion of stylistic, literary, and social questions, and by lectures which will aim at giving a comprehensive view of the development of the German drama in the nineteenth century, with some attention to other literary forms. Both English and German will be used in the class-room.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 16.)

*The course will meet five times a week for six weeks at 9 A.M., in Sever 13.*

The fee for this course is \$20. (See pages 21-22.)

For further information address the Instructor, Dr. H. J. WEBER, 43 Lexington Avenue, Cambridge, Mass.

#### S4. MIDDLE HIGH GERMAN

The work in this course will consist of: —

1. A brief study of Middle High German grammar.
2. The reading in the original and translating into Modern German of representative works of mediaeval German literature.
3. Daily lectures, mainly in German, on the development of German literature from the eleventh to the fourteenth century.

This course is intended for teachers and others who have already a fairly thorough knowledge of Modern German, and who wish to obtain some insight into the history of the language, and by this means a more accurate and scientific knowledge of its grammar, structure, and idiomatic usage. To this end constant attention will be given, in the discussion of the grammar and in the reading, to the origin and development of Modern German word-forms, constructions, and idioms; likewise to the change undergone in the meaning of words, and to their relation to words in kindred languages.

The reading will comprise the most important portions of *Das Nibelungenlied* (ed. Bartsch), Hartmann's *Der Arme Heinrich* (ed. Toischer), and selections from Wolfram von Eschenbach's *Parzival*, and from the poems of the Minnesinger (Walther von der Vogelweide and others) in Bachmann's *Mittelhochdeutsches Lesebuch*.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. This course may not be counted for a degree by a student who has been credited with German 8. (See page 16.)

*The course will meet five times a week for six weeks at 11 A.M., in Sever 13.*

The fee for this course is \$20. (See pages 21-22.)

For further information address the instructor, Dr. H. J. WEBER, 43 Lexington Avenue, Cambridge, Mass.

**GREEK.** (See page 46.)

**GREEK LIFE.** (See page 47.)

## HISTORY AND GOVERNMENT

**WILLIAM MACDONALD**, Ph.D., LL.D., *Lecturer on American History, Harvard University; Professor of American History, Brown University.*

**WILLIAM SCOTT FERGUSON**, Ph.D., *Assistant Professor of History.*

**JAMES SULLIVAN**, Ph.D., formerly *Instructor in History and Palaeography, Harvard University; Principal, Boys' High School, Brooklyn, N.Y.*

**WILLIAM EDWARD LUNT**, Ph.D., formerly *Assistant in Government, Harvard University; Instructor in History, University of Wisconsin.*

Six general courses will be given in this group of subjects, beginning July 7, and ending August 18. These courses are designed for teachers or well-trained students, and will devote special attention to methods of presentation and to useful class exercises; some previous knowledge of the matters treated is presupposed.

Attention is called to the opportunities to visit, under competent direction, the historical sites and buildings in Eastern Massachusetts. See *Historical Excursions*, page 96.

The fee for any one course is \$20. It will not be possible to do the entire work and take the examinations, or to receive the Certificate, in more than one course.

These courses will begin on Wednesday, July 7, and end on Wednesday, August 18, 1909.

☞ For a course on *Methods of Teaching History*, see page 105.

## S2. GREEK HISTORY

This course is intended primarily for teachers of ancient history in secondary schools. The history of Greece will be treated as part of the general history of the ancient world. Special attention will be given to Greek culture—to its chief masterpieces, and to the conditions which promoted its rise and spread. The lectures will not attempt to give a continuous narrative, but will be devoted to

a series of topics selected because of their importance. Various aspects of the following general subjects will be presented:—

1. Recent histories of Greece.
2. The Mycenaean Age.
3. The Greek Middle Ages.
4. Greek Expansion.
5. The growth of Sparta.
6. Solon and the Age of the Seven Wise Men.
7. The Persian Empire.
8. Judaism *vs.* Hellenism.
9. Themistocles and Pericles.
10. The State and Empire of the Athenians.
11. Public Life in Athens.
12. Attic Society and Culture during the Age of Pericles.
13. The Peloponnesian War.
14. The Sophists.
15. Socrates, Thucydides, and Hippocrates.
16. Imperial Sparta.
17. The City-state and City-economy.
18. The Class Struggles of the Fourth Century B.C.
19. Tyranny — Dionysius and Agathocles.
20. Monarchy — Philip and Alexander.
21. Hellenistic Athens.
22. The Dynasty of the Ptolemies.
23. Asia under the Seleucids.
24. Hellenistic Culture.
25. Rome in the Orient.
26. Greece at the time of Plutarch.
27. From Plutarch to Justinian.

Questions of method and of relative emphasis in the teaching of Greek History will receive consideration, and the books of most value to teachers will be indicated.

Students who desire a certificate for the work of the course will be required to cover the field of Greek history in a substantial manual, such as Bury's *History of Greece*, and to do a considerable amount of assigned reading in the sources in English translation, and in the recent literature of the subject. Two written reports and a final examination will be required.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. Students who have been credited with History 4 may not count this course; and those who afterwards take History 4 may be credited only a half-course therefor. (See page 16.)

The fee for the course is \$20. (See pages 21-22.)

*The class will meet for at least one hour five times a week for six weeks in Sever 7, at 9 A.M.*

For further information address Professor W. S. FERGUSON, 16 Quincy Street, Cambridge, Mass.

### S3. ROMAN HISTORY

This course is primarily intended for teachers of ancient history in secondary schools. The history of Rome will be treated as part of the general history of the ancient world. The earlier period will not be neglected, but the main emphasis will be placed upon the later Republic and the Empire. The lectures will not attempt to give a continuous narrative, but will treat topically the more important subjects. Particular attention will be given to the Roman system of government and to economic and social conditions. Questions of method and of relative emphasis in the teaching of Roman history will also be considered, and the books of most value to teachers will be indicated.

The instructor will be ready to arrange and direct a special course of reading and investigation for students who are prepared to do advanced work in Ancient History.

Students who desire a certificate for the work of the course will be required to cover the field of Roman history in a substantial manual, such as Pelham's *Outlines of Roman History*, and to do a considerable amount of assigned reading in the general histories of Mommsen, Ihne, and Duruy, and in more special works. Two written reports and a final examination will also be required.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. Students who have been credited with History 3 may not count this course; and those who afterwards take History 3 may be credited only a half-course therefor. (See page 16.)



*The class will meet for at least one hour five times a week for six weeks in Sever 7, at 10.30 A.M.*

The fee for the course is \$20. (See pages 21-22.)

For further information address Professor W. S. FERGUSON, 16 Quincy Street, Cambridge, Mass.

## B. MODERN EUROPEAN HISTORY

This course, covering the general history of continental Europe from about 1500 A.D. to the present day, is intended primarily for teachers of history, in both elementary and secondary schools, who desire to have a European background for their teaching of English and United States history, or wish to lay a better foundation for teaching modern European history. A large proportion of the course will be given to late eighteenth and to nineteenth century history.

The instruction will be by lectures and by oral discussions of assigned topics, and the collateral reading done on them. It will be the object of the course to make such selections for reading as may be easily read by pupils in the schools, and with which every teacher should be familiar.

Students who desire a certificate will be required to do a large amount of reading, to present written reports and maps, and to take a final examination. To others, exercises connected with the class-room teaching of modern history, such as working up bibliographical selections and fiction suitable for pupils, organizing subject-matter for presentation to a class, and selecting topics for emphasis, will be given.

Students should possess copies of Robinson's *History of Western Europe*, Robinson and Beard's *The Development of Modern Europe*, and the *History Syllabus for Secondary Schools* (Mediaeval and Modern Sections) prepared by the New England History Teachers' Association. Other books treating the period or a portion of it in greater detail will be reserved in the Library for the use of the class.

This course may be counted as a half-course for a bachelor's degree. Students who have been credited with History 2 may not count this course; and those who afterwards take History 2 may be credited only a half-course therefor. (See page 16.)

*This course will meet for at least one hour five times a week for six weeks at 10.30 A.M., in Harvard 1.*

The fee for the course is \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Dr. JAMES SULLIVAN, Principal, Boys' High School, Brooklyn, N. Y.

#### ENGLISH HISTORY, 1509-1689

This course is intended to present, in systematic form, a selected number of important topics in the political and ecclesiastical history of England from the accession of Henry VIII to the Revolution of 1688-89. Particular attention will be paid to the religious and constitutional aspects of the Reformation, the Puritan Revolution, and the Civil War.

For properly qualified students the course will serve as an introduction to the study of modern English history, while it is at the same time especially designed to meet the needs of teachers of history in secondary schools and of students who desire a comprehensive view of the period.

The instruction will be chiefly by informal lectures, supplemented by collateral reading, oral and written reports on assigned topics, and discussions.

Provision will be made, as far as possible, for the needs of advanced students who desire to pursue extended reading or investigation in connection with the course.

#### OUTLINE OF LECTURES AND TOPICS

1. England at the beginning of the sixteenth century.
2. Cardinal Wolsey.
3. The separation from Rome.
4. The supremacy of Henry VIII.
5. Edward VI and the Reformation.
6. Mary and the Catholic reaction.
7. The Protestant settlement under Elizabeth.
8. International relations, 1558-1603.
9. Social England under Elizabeth.
10. The policy of James I.
11. Beginnings of English colonization.
12. Personal government of Charles I.
13. Early movements of the Puritan Revolution.

14. Charles I and Parliamentary parties.
15. The first months of the Civil War.
16. Oliver Cromwell.
17. The fall of Charles I.
18. The period of the Commonwealth.
19. The period of the Protectorate.
20. Restoration of Charles II.
21. Charles II and Clarendon.
22. Charles II and the Cabal.
23. Charles II and Shaftesbury.
24. Colonial expansion.
25. English commerce and the Navigation Acts.
26. Personal government of James II.
27. The Revolution of 1688-89.
28. England at the end of the seventeenth century.

The course presupposes such general acquaintance with the history of England and of western Europe as should be had from the study of modern high school text-books of those subjects, such as those of Andrews, Cheyney, Coman and Kendall, Robinson, or Myers. The lectures will follow in general the order of topics in Gardiner, *Students' History of England*, Vol. II (Longmans); and each student will be expected to have a copy of this book, and also of Adams and Stephens, *Select Documents of English Constitutional History* (Macmillan). It will be very advantageous to have at hand Green, *Short History of the English People*, and either Gardiner, *Students' Atlas of English History* (Longmans), or Dow, *Atlas of European History* (Holt).

A large library of selected books on English history will be open to members of the course, with access to the shelves.

This course is accepted as a half-course for the Bachelors' degrees in Harvard University. (See page 16.)

The fee for the course is \$20. (See pages 21-22.)

*The class will meet for one hour five times a week for six weeks at 10 A.M., in Harvard 6.*

For further information address the Instructor, Professor WILLIAM MACDONALD, Brown University, Providence, R. I.

## HISTORY OF THE UNITED STATES, 1850-1898

This course is intended to present, in systematic form, a survey of the history of the United States from the compromise of 1850 to the end of Reconstruction, and, more cursorily, an outline of events from the end of Reconstruction to the Spanish-American War. It includes, therefore, the last years of the slavery controversy, the periods of Civil War and Reconstruction, and the political development of the last quarter of the nineteenth century. So much acquaintance with the whole field of American history as is to be had from a study of a good modern high school text-book of the subject is presupposed.

The instruction will be by lectures, supplemented by collateral reading, oral and written reports on assigned topics, study of the texts of important documents, and discussions.

Provision will be made, as far as possible, for the needs of advanced students who desire to pursue extended reading or investigation in connection with the course.

## OUTLINE OF LECTURES

1. The United States in 1850.
2. The question of fugitive slaves.
3. The Kansas-Nebraska act.
4. The Kansas struggle.
5. The Dred Scott case.
6. Lincoln and the new Republican party.
7. Secession.
8. Attempts at compromise.
9. Outbreak of the Civil War.
10. The Confederate States of America.
11. Financial problems, 1861-1865.
12. The process of emancipation.
13. Military events of 1861 and 1862.
14. Military events of 1863 and 1864.
15. The end of the Civil War.
16. The North during the war.
17. The South during the war.
18. International relations, 1861-1871.

19. Lincoln's policy of Reconstruction.
20. The great Reconstruction acts.
21. The enforcement of the Reconstruction acts.
22. The impeachment of President Johnson.
23. The end of Reconstruction.
24. The Hayes-Tilden controversy.
25. Tariff questions, 1865-1898.
26. Political reforms, 1865-1898.
27. Financial development, 1865-1898.
28. The war with Spain.

Each student will be expected to possess Burgess, *The Civil War and the Constitution*, 2 vols., and *Reconstruction and the Constitution* (Scribners), and MacDonald, *Select Statutes* (Macmillan). Extensive use will also be made of the following works for reference, and access to personal copies of any of them will be advantageous: Rhodes, *History of the United States since the Compromise of 1850*; Dunning, *Essays on the Civil War and Reconstruction*, and *Reconstruction, Political and Economic*; Sparks, *National Development*; Dewey, *National Problems* (the last three works in the *American Nation* series, Vols. XXII-XXIV); Dewey, *Financial History of the United States*; Hart, *American History Told by Contemporaries*, Vol. IV; and the later volumes of the *American Statesmen* series.

A large library of selected books on American history will be open to members of the course, with access to the shelves.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is equivalent to half of History 13. (See page 16.)

The fee for the course is \$20. (See pages 21-22.)

*The class will meet for one hour five times a week for six weeks at 11 A.M., in Harvard 6.*

For further information address the instructor, Professor WILLIAM MACDONALD, Brown University, Providence, R. I.

## S1. CIVIL GOVERNMENT

This course will be given by Dr. LUNT.

The general aim of this course is to analyze the leading principles of political organization and to study comparatively the governments of some of the more important modern states. The political sys-



tems to be compared are those of the United States, Great Britain, Germany, France, and Switzerland. Special attention will, however, be given to the United States. In each case particular study will be made of the principles underlying the political system, the relation of the executive and legislative organs of government, the structure of the judiciary, and the organization of political parties.

### METHOD

The course will comprise a series of thirty lectures with collateral reading in a number of books. An endeavor will be made to indicate the main accessible sources of material for the study of the subject of civil government and, in general, to increase the bibliographical knowledge of students taking the course. Both in scope and method the course is designed to be of value to teachers of the subject in academies and schools. Each member of the course will be asked to make a special investigation of some particular phase of European or American government and to present a written report thereon. Assistance will be given through personal conferences, in the selection and use of materials for this study. The scope of the work to be covered, either by lectures or reading, is indicated in the following outline:—

#### I. INTRODUCTORY

The study of civil government, its purposes and methods; the scope and method of a school syllabus in civics; the relation of history to political science; comparative advantages of the deductive and inductive methods; sovereignty, its nature and basis; the manifestations of sovereign power; the functions of government in general; the forms of government; unitary and federal governments compared; the different forms of unitary government; Great Britain and France compared; the different forms of Federal government; Germany and the United States compared; the agencies of government; the executive, legislative and judicial organs of government; Montesquieu's doctrine; the relation of the organs of government to one another; the flexibility of governmental organization; written and unwritten constitutions; advantages and disadvantages of each; the relation of the individual to the government in different states.

*References:* Hart, *Actual Government*, Chap. III; Dicey, *The Law*

of the Constitution, Chap. III; Montesquieu, *The Spirit of Laws*, Book XI; Mill, *Representative Government*, pp. 1-52; Fairlie, *National Administration*, passim; Woodrow Wilson, *The State*, Chaps. I and II.

## II. THE GOVERNMENT OF THE UNITED STATES

A good general knowledge of the American Constitution will be assumed. But an endeavor will be made to emphasize the salient features of the American political system as contrasted with those of British and Continental countries, to indicate methods of study and presentation, and to familiarize the student with the general literature of American government. Special attention will be given to the development of the Constitution through judicial decisions.

(a) *Federal Government*.—The sources of the Constitution; English, Dutch, and colonial sources; the Great Compromises and their influence on the general framework of the Constitution; the division of powers; exclusive and concurrent powers; expressed and implied powers; the eighteen powers of Congress; methods of arranging these; analysis of these powers; the trend of judicial decisions in the interpretation of powers; special analysis of the “borrowing” and “commerce” powers; the organs of legislation; the Senate; strong and weak points in its structure; its influence at various periods; proposals for changing the method of electing Senators; the House of Representatives; the Speaker; the Committee system; procedure compared with that of the British House of Commons; the executive organs of government; the President; comparison of the absolute and qualified vetoes in their workings; the Cabinet; the relations of the President to members of the Cabinet; the independence of the executive, how secured; the judiciary; the division of jurisdiction between federal and state courts; analysis of the Bill of Rights.

(b) *State Governments*.—Variety and unity of state organization; the admission of new states; inter-state obligations; the structure and relations of executive, legislative, and judicial organs; the field of state activities.

(c) *Local Government*.—The organization of the rural unit; county, town, and village organization; the organization of the urban unit; types of city government; the relation of the local unit to the state.

*References*: Stevens, *Sources of the Constitution*, Chaps. VI, VII; Hart, *Actual Government*, pp. 34-64, 113-212; Bryce, *American Commonwealth*, Chaps. V-XIV; McClain, *Constitutional Law in the United States*, Part III; *The Federalist* (Lodge's edition), Articles Nos. 41-46, 52-56, 62-65, 68-72, 76-77, 80-82; Thayer, *Cases in Constitutional Law* (selected cases); Goodnow, *City Government in the United States*; Fairlie, *Local Government in Counties, Towns, and Villages*.

### III. EUROPEAN GOVERNMENTS

This section of the course will deal, in general form, with the structure and functions of government in the chief European states, France, Germany, and Great Britain. The framework of government in each, the relations of the different organs of government to one another, and the relations of local to central administration will be discussed. The main design of this portion of the study will be to broaden the student's knowledge of the structure and functions of government in general, and to emphasize, by contrast and analogy, the salient features of the American system.

*References*: Anson, *The Law and Custom of the English Constitution*; Courtney, *The Working Constitution of the United Kingdom*; Traill, *Central Government*; Lowell, *Governments and Parties in Continental Europe and Government of England*; Howard, *The German Empire*; Bodley, *France*; Vincent, *Government in Switzerland*, and Munro, *Government of European Cities*. Members of the course will be given the opportunity of acquiring some grasp of the special literature of modern European governments.

### EXAMINATION

At the close of the course there will be an examination on the lectures and the more important parts of the assigned reading. Students who pass this examination, and present a satisfactory written report of their investigations in the special field allotted, will be granted a certificate.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. It is equivalent to half of Government 1. (See page 16.)

*The class will meet for at least one hour five times a week for six weeks at 11 A.M., in Sever 9.*

The fee for this course is \$20. (See pages 21-22.)

For further information address the Instructor, Dr. W. E. LUNT,  
803 State Street, Madison, Wis.

## HISTORICAL EXCURSIONS

WILLIAM EDWIN DORMAN, A.B., LL.B., formerly *Assistant in History*.

GUY NEWHALL, A.B., LL.B., formerly *Assistant in Government*.

A series of excursions, open to all members of the Summer School, will be arranged to the points of chief historic and literary interest in Eastern Massachusetts. Many privileges will be open to members of these parties which are not ordinarily extended to tourists. All details of the excursions are arranged in advance. The fee in each case covers transportation, admittance fees, and lunch or dinner, if the journey lasts more than half a day. Specific announcements will be posted several days before each of the excursions.

## SCHEDULE OF EXCURSIONS

1. *Lexington and Concord*.— (All day, probably Saturday, July 10.) Route of British Troops and Paul Revere, Black Horse Tavern, Jason Russell House, Harrington House, Munroe Tavern, Lexington Town Hall, Lexington Battle-Ground, Belfry, Buckman Tavern, Harrington and Hancock-Clarke Houses, place of Revere's capture, Merriam House, Houses of Emerson, Hawthorne, Alcott and Thoreau, Wright Tavern, Concord Antiquarian Society, Old Manse, Elijah Jones House, North Bridge and Minute Man, Sleepy Hollow Cemetery, etc. — By special trolley cars and omnibuses; expense, about \$2.

2. *Cambridge, and Mt. Auburn*.— (Half-day, probably Wednesday, July 14.) Washington Elm and Headquarters, "Bishop's Palace," Site of Holmes House, Christ Church and Burial Ground, "Tory Row," Longfellow and Lowell houses; Mt. Auburn Cemetery. Special trolley cars or omnibuses; expense, about 25 cents.

3. *Haverhill and Amesbury*.— (All day, probably Saturday, July 17.) "Whittier Excursion." Birthplace of John G. Whittier; the scene of "Snow-Bound," Fernside Brook, Home of Lydia Ayer,

Whittier Elm, Job's Hill in East Haverhill; Whittier's Grave, Friends' Meeting House, Captain's Well and residence in Amesbury; Salisbury Beach, scene of "Tent on the Beach"; steamer on the Merrimack River, passing scenes of the following poems by Whittier: "Mabel Martin," "The Countess," "My Playmate," "Our River," "Revisited," "Exiles," "Laurels," "Home-Coming of the Bride," "June on the Merrimack," etc. — By train, special trolley cars, and steamer; expense, about \$2.50.

4. *Bunker Hill and Old Boston*. — (Half-day, probably Wednesday, July 21.) Bunker Hill Fortifications and Monument, North End of Boston, Paul Revere House, Sites of Old North Church, Frankland, Governor Hutchinson, Robert Newman, and Governor Phipps Houses, Cotton Mather House, Christ Church (Paul Revere's Signals), Copp's Hill Burial Ground. — By special trolley cars; expense, about 75 cents.

5. *Plymouth*. — (All day, probably Saturday, July 24.) National Monument to the Forefathers, Pilgrim Hall, Plymouth Court House, Burial Hill, Leyden Street, Pilgrim Spring, Cole's Hill, Winslow House, Plymouth Rock, Plymouth Harbor and Clarke's Island, South Shore of Massachusetts and Boston Harbor. — By special trolley cars, train and steamer; expense, about \$2.50.

6. *Marblehead*. — (Half-day, probably Wednesday, July 28.) Town-Hall, Lee Mansion, King Hooper House, St. Michael's Church, Elbridge Gerry House, Joseph Story House, House of Evelina Bray, John Glover House, Orne House, Burial Hill, Birthplace of Moll Pitcher, Agnes Surriage Well, Fort Sewall, Pirate's Home, British Landing Place, etc. By train and special trolley cars; expense, about \$1.20.

7. *Salem and Danvers*. — (All day, probably Saturday, July 31.) Charter Street Burial Ground, "Dr. Grimshawe House" (Home of Mrs. Hawthorne), Hawthorne's Birth-place, Custom House, "House of Seven Gables," "Scarlet Letter House," "Witch House," Records of Witch Court, North Bridge (scene of first armed resistance of the Revolution), Essex Institute, Town-Pump, Peabody Museum, George Jacobs, Page, Collins, Rebecca Nurse, and Sarah Osborn Houses, Oak Knoll (Home of Whittier), and Birth-place of Israel Putnam. — By train, special trolley cars, and omnibuses; expense, about \$2.25.



## BOOKS

The following books will be found useful for introductory reading and study. These and many others will be reserved as a select library on local history and antiquities for the use of students in the Summer School.

*Historical Works*

- JUSTIN WINSOR, Editor: *Memorial History of Boston* (4 vols., Boston, 1880-81).
- EDWARD G. PORTER: *Rambles in Old Boston* (Boston, 1887).
- MOSES KING: *How to See Boston* (Boston, 1895).
- L. POWELL, Editor: *Historic Towns of New England* (N. Y., 1898).
- EDWIN M. BACON: *Historic Pilgrimages in New England* (Boston, 1898).
- EDWIN M. BACON: *Literary Pilgrimages in New England* (Boston, 1902).
- JOSEPHINE L. SWAYNE: *The Story of Concord* (Boston, 1906).
- Historic Guide to Cambridge*, compiled by Hannah Winthrop Chapter, D.A.R.
- S. A. DRAKE: *A Book of New England Legends and Folk-Lore in Prose and Poetry* (Boston, 1884).
- S. A. DRAKE: *Historic Mansions and Highways about Boston* (Boston, 1899).
- S. A. DRAKE: *Nooks and Corners of the New England Coast* (N. Y., 1875).

Three inexpensive and useful books which it would be well to own are:—

- FRANK B. SANBORN: *Recollections of Seventy Years* (Boston, 1909).
- EDWIN M. BACON: *Walks and Rides in the Country round about Boston* (Boston, 1897); several maps.
- J. W. FREESE: *Historic Houses and Spots in Cambridge and Near-by Towns* (Boston, 1897); excellent heliotypes.
- S. T. PICKARD: *Whittier Land* (Boston, 1904); a charming description of the Whittier country by his authorized biographer.

*Historical Novels and Poems*

- JANE G. AUSTIN: *Standish of Standish; A Nameless Nobleman; Dr. Le Barron and his Daughters*.
- EDWARD L. BYNNER: *Agnes Surriage; Zachary Phipps*.
- JAMES FENNIMORE COOPER: *Lionel Lincoln*.
- LYDIA MARIA CHILD: *The Rebels*.

NATHANIEL HAWTHORNE: *House of the Seven Gables*; *Dr. Grimshawe's Secret*; *Rill from a Town Pump*; *Endicott and the Red Cross*; *Mosses from an Old Manse*; *The Scarlet Letter*.

OLIVER WENDELL HOLMES: *Grandmother's Story of the Battle of Bunker Hill*.

LUCY LARCOM: *A Gambrel Roof*.

HENRY W. LONGFELLOW: *Courtship of Myles Standish*; *Giles Corey* (*New England Tragedies*); *Paul Revere's Ride*.

JOHN G. WHITTIER: *Snow-Bound*; *Telling the Bees*; *In School Days*; *The Countess*; *The Preacher*; *Prophecy of Samuel Sewall*; *Witch of Wenham*; *Home-Coming of the Bride*.

---

### LATIN. (See page 48.)

---

### MATHEMATICS

JAMES LEE LOVE, A.M., *Assistant Professor of Mathematics*.

WILLIAM FOGG OSGOOD, Ph.D., *Professor of Mathematics*.

MAXIME BÔCHER, Ph.D., *Professor of Mathematics*.

GEORGE WILLIAM EVANS, A.B., *Principal, Charlestown High School, Charlestown, Mass.*

WILLIAM CHARLES BRENKE, S.M., Ph.D., *Assistant Professor of Mathematics, University of Nebraska, formerly Instructor in Mathematics, Harvard University*.

Six courses in Mathematics are offered, embracing *Advanced Algebra*, *Solid Geometry*, *Plane Trigonometry*, *Plane Analytic Geometry*, *Introduction to Modern Geometry*, and an introductory course in *Differential and Integral Calculus*. These courses are described below. Work will begin in each course on Wednesday, July 7, and end on Wednesday, August 18.

Class-room exercises, consisting of lectures and recitations, and occupying about an hour and a half each, will be held five times a week.

Text-books, when not named below, will be announced at the first meeting of the course; and, if necessary, may be purchased at once from Cambridge book-sellers. The student is advised to bring from home any good text-books he may possess covering the subject he proposes to study.

The fee for each course is \$20. (See pages 21-22.)

For a course on *Methods of Teaching Mathematics*, see page 106.

## SD. ADVANCED ALGEBRA

This course will be serviceable to teachers or students pursuing any branch of pure or applied mathematics, and is open to anyone who has satisfied the usual college entrance requirement of "algebra through quadratics."

The principal subjects to be treated are those now usually required for the college entrance examination in advanced algebra, among which will be permutations and combinations; complex numbers and their graphical representation; determinants, including the solution of linear equations; the theory of algebraic equations, and the solution of numerical equations. A considerable part of the time will be devoted to the theory of quadratic equations and to simultaneous equations. The course will be conducted by informal lectures, Fine's *College Algebra* being used as the principal source of problems.

This course is the equivalent of Mathematics *D* or Engineering 1a of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees, or in lieu of the entrance requirement in Advanced Algebra in Harvard or Radcliffe College. This course and Mathematics *D* or Engineering 1a may not both be counted for a degree. (See page 16.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 30.*

The fee for the course is \$20. (See pages 21-22.)

For further information address the Instructor, Professor JAMES L. LOVE, 4 Lawrence Hall, Cambridge, Mass.

## SE. SOLID GEOMETRY

This course is intended for teachers of geometry, and for students who have done good work in plane geometry. It is not open to students of Harvard College or the Lawrence Scientific School who are "conditioned" in plane geometry. No preparation will be necessary beyond that specified under Elementary Algebra and Plane Geometry in the requirements for admission to Harvard College.

Some one of the modern text-books of Elementary Geometry will be found convenient for reference, though none of them will be

strictly followed in the work of the course. The ground to be covered is in part indicated by the New England List of Theorems in Elementary Geometry (Ginn), but will also include original exercises, numerical mensuration, and the correlation of the subject matter with other branches of school Mathematics. Some care will be used in the application of the Theory of Limits, and in the establishment of systematic arrangements of theorems.

This course is the equivalent of Mathematics *E* of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees in Harvard University, or in lieu of the entrance requirement in Solid Geometry for Harvard or Radcliffe College. This course and Mathematics *E* may not both be counted for a degree. (See page 16.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever B.*

The fee for the course is \$20. (See pages 21-22.)

For further information address the Instructor, Mr. GEORGE W. EVANS, Principal, Charlestown High School, Boston, Mass.  
bn

#### S4. PLANE TRIGONOMETRY

This course is intended for persons who have not studied trigonometry or for those who wish to review it. It will be found serviceable for teachers of algebra and geometry, and for those preparing to teach trigonometry.

A good knowledge of plane geometry and of elementary algebra is required for admission to this course. It will cover the usual topics, such as measurement of angles, the trigonometric functions, use of trigonometric and logarithmic tables, solution of triangles, applications to heights, distances and areas, trigonometric identities, inverse trigonometric functions, and trigonometric equations.

The fundamental formulae of the subject will be carefully deduced, and familiarity with them secured by numerous exercises and applications. Trigonometry is an indispensable introduction to higher mathematics as well as a most serviceable tool of investigation in applied mathematics; and the aim of the instructor will be to present the subject in such way as to make it serve both these ends.

This course is the equivalent of Mathematics *A* or Engineering *1b* of the Harvard Courses, and is accepted as a half-course for the

bachelors' degrees in Harvard University, or in lieu of the entrance requirement in Plane Trigonometry for Harvard or Radcliffe College. This course and Mathematics *A* or Engineering *1b* may not both be counted for a degree. (See page 16.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 31.*

The fee for the course is \$20. (See pages 21-22.)

For further information address the Instructor, Professor W. C. BRENKE, 400 So. Twenty-sixth Street, Lincoln, Nebraska.

### SB. PLANE ANALYTIC GEOMETRY

This course will be serviceable for teachers of algebra, geometry, trigonometry, or physics; also for persons preparing to teach analytic geometry; and for students in colleges or scientific schools who are preparing to take up differential and integral calculus. In order to do satisfactory work in it the student should have a good knowledge of plane geometry, of algebra through quadratic equations, and of plane trigonometry.

The work in analytic geometry will include a study of the straight line, circle, ellipse, parabola, and hyperbola, in Cartesian and polar coördinates.

Much stress will be laid on the solution of problems and exercises, and a considerable amount of written work will be expected from the student.

This course is the equivalent of Mathematics *B* or Engineering *1d* of the Harvard Courses, and is accepted as a half-course for the bachelors' degrees in Harvard University. This course and Mathematics *B* or Engineering *1d* may not both be counted for a degree. (See page 16.)

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 8.*

The fee for the course is \$20. (See pages 21-22.)

For further information address the Instructor, Professor MAXIME BÔCHER, 48 Buckingham Street, Cambridge, Mass.



## S3. INTRODUCTION TO MODERN GEOMETRY

This course will be serviceable to teachers of mathematics in secondary schools by giving them a broader outlook on the whole subject of geometry. It is also well adapted to the needs of those intending to pursue their mathematical studies farther. Few subjects of such a relatively elementary and concrete character present such a variety of interesting details and at the same time such an organic unity between the parts. These facts, combined with the largeness of scientific method employed, make this subject particularly well suited to give the student his first introduction to higher mathematics. In order to do satisfactory work in the course, the student should have a good knowledge of elementary plane geometry and of the elements of plane analytic geometry.

The work of the course will cover some of the more important developments of geometry which took place during the first half of the nineteenth century. These developments involve both the methods of pure geometry and those of analytic geometry, and both of these sides of the subject will be considered in the present course.

Opportunity will be taken to present, often from a number of different aspects, some of the most fundamental propositions of Modern Geometry, such as Pascal's, Brianchon's, and Desargues' theorems and the harmonic properties of the complete quadrilateral. Nevertheless the main emphasis of the course will be laid not on any body of geometric facts but rather on the *methods*, such as abridged notation, reciprocation, projection, etc., by which Poncelet, Pluecker, Moebius, Steiner, and others have taught us not merely how geometric propositions may be proved, but how they may actually be *discovered*. In fact, the course may be regarded as, in a sense, a course in geometric method.

This statement, however, should not be regarded as implying that it is on the method *in itself* that attention will for the most part be fixed. On the contrary, most of the time in the course will be devoted to applications of the methods to the treatment of concrete geometric problems, this being, it is believed, the only way in which the methods can come to be appreciated and assimilated.

The instruction will be given by informal lectures without the use of any text-book. Various books for reference will be placed

on the reserved shelves of the general reading-room to which the members of the course will have free access.

A considerable amount of written work in the shape of the solutions of exercises will be expected from the student.

This course is the equivalent of about half of Mathematics 3, and is accepted as a half-course for the bachelors' degrees in Harvard and Radcliffe in the case of students who have not already taken Mathematics 3. (See page 16.)

*This class will meet for an hour and a half five times a week for six weeks at 9 A.M., in Sever 8.*

The fee for the course is \$20. (See pages 21-22.)

For further information address the Instructor, Professor M. BÔCHER, 48 Buckingham St., Cambridge, Mass.

## S2. CALCULUS

This course is intended for teachers of mathematics, and for students who wish to use a portion of the vacation to prepare for advanced courses in pure or applied mathematics in which the calculus is required.

A thorough knowledge of algebra, plane trigonometry, and of plane analytic geometry is required for admission to this course. Persons contemplating taking it are requested to write to the instructor, or to see him, before the course begins, describing fully their mathematical training, in order that he may advise them whether they can profitably take the course.

The theory of the calculus will be given in informal lectures. The elements of differentiation and of integration will be thoroughly treated. Numerous applications will be made to problems in geometry and physics, including problems in maxima and minima, areas and lengths of plane curves, surfaces and volumes of solids, centres of gravity, moments of inertia, fluid pressures, etc. Osgood's *Differential and Integral Calculus* (Macmillan, 1907) will be used as a text.

The aim of the course will be to lay a firm foundation for further study of the calculus. No previous study of the subject will be required of those who enter the course.

*This class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 20.*

The fee for the course is \$20. (See pages 21-22.)

For further information address Professor W. F. OSGOOD, 74 Avon Hill St., Cambridge, Mass.

---

**MECHANICS.** (See page 61.)

---

### METHODS OF TEACHING

Two special courses in this field will be given in 1909; one in Methods of Teaching History and one in Methods of Teaching Mathematics. These are described below.

Many other courses are given especially for teachers; and, although they deal primarily with the subject matter of the several topics, attention is given also to methods of presentation; and they will be found most helpful from the point of view of methods. Such courses are given in astronomy, botany, chemistry, classics (Greek and Latin), English, French, German, Music, physics, Spanish, etc., and they are described herein.

#### 1. THE EQUIPMENT OF THE HISTORY TEACHER, AND METHODS OF TEACHING HISTORY

The object of this course is to outline the preparation which a teacher should have to undertake the teaching of history in both elementary and secondary schools, and to discuss the methods which have been employed by the most successful teachers. The text with which all intending to take the course should provide themselves is Henry E. Bourne's *The Teaching of History and Civics in the Elementary and the Secondary School* (Longmans, Green & Co., New York, \$1.50). The course will open with a consideration of the bibliography of the subject of methods of history teaching, and some one or several books will be assigned to each student for reading and for report to the class. Each student will be called upon to outline several lessons in the subject matter of history for presentation, and will be given practice in teaching a portion of the class. Exercises in the selection of the important and the elimination of the unimportant in history, in the working up of a topic, and in good story telling, will be given. Teaching pupils how to study the text, the use of note-books, outlines, maps, oral recitations, written recitations, examinations, special reports, library

references, the use of pictures and lantern slides, the source method, the study of local history, comparative curricula, the correlation of the study of history with geography, civics, economics and English, and departmental organization, will receive treatment in the lectures. In addition, each student or group of students will be required to present a report on some topic connected with the lectures, and a critique of some recent text-book.

For *teachers in service only* this course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. (See page 16.)

*This class will meet for at least one hour five times a week for six weeks at 9 A.M., in Harvard I.*

The fee for the course is \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Dr. JAMES SULLIVAN, Principal, Boys' High School, Brooklyn, N.Y.

#### S10e. THE METHODS AND EQUIPMENT OF A TEACHER OF MATHEMATICS

The work of the course is designed primarily for persons who teach, or intend to teach, arithmetic, algebra, geometry, and trigonometry. The main subject of the course will be a detailed survey of the curriculum, with a discussion of text-books and of class-room devices. Especial attention will be paid to the proposition to teach algebra and geometry as parts of a united subject; and some study will be made of current educational literature. Ability to make use of French and German text-books, though not required, will be an advantage.

The student is advised to bring with him such hand-books on the teaching of mathematics as he may have.

Students expecting to count the course for a degree will be asked to make written reports upon assigned subjects.

For *teachers in service only* this course is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. (See page 16.)

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Sever B.*

The fee for the course is \$20. (See pages 21-22.)

For further particulars, address Mr. GEORGE W. EVANS, Principal, Charlestown High School, Boston, Mass.

## MUSIC

JOHN PATTEN MARSHALL, *Assistant Professor of Music, Boston University.*

OSBOURNE MCCONATHY, *Supervisor of Music, Chelsea, Mass.*

Four courses in Music will be given in 1909, beginning on Wednesday, July 7, and ending on Wednesday, August 18.

No special technical training in vocal music is to be given in these courses, but they will be carefully designed with reference to the growing importance of music teaching in the secondary schools. The principles indispensable to a sound knowledge of music will be analyzed and the most effective modern methods of presenting these principles will be thoroughly discussed.

#### I. THE APPRECIATION OF MUSIC: ANALYTICAL STUDY OF MASTERPIECES FROM THE POINT OF VIEW OF THE LISTENER

This course assumes no special technical knowledge of music on the part of the student. Its object is to promote an intelligent appreciation of the chief masters and masterpieces of music from the eighteenth century to the present day. The general principles of musical art and its similarities and contrasts with other arts will be discussed, and collateral reading on the historical schools of music and the musical influences under which the various masters developed will be suggested. Students in this course will have free access to an Aeolian Orchestrelle and to a Pianola. In this way a wide range of literature for orchestra and for string quartet may be profitably studied.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. A student may not count this course and also the regular course Music 4. (See page 16.)

*This class will meet five times a week for six weeks, from 9.15 to 10.15 A.M., in Holden Chapel.*

The fee for this course is \$20. (See pages 21-22.)

For information address the Instructor, Professor J. P. MARSHALL, 688 Boylston Street, Boston, Mass.



## II. ELEMENTARY HARMONY

This course is designed for persons who wish to acquire a thorough knowledge of the grammar of music, and the main laws of musical construction. The work is similar to the work done in the first half-year in Music 1, at Harvard College, including Intervals, Scales, Triads, Dominant Seventh Chords, and the harmonization of given melodies in soprano and bass, with original work.

A thorough knowledge of the rudiments of music, and some proficiency in piano playing is presupposed.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. A student may not count this course and also the regular course Music 1. (See page 16.)

*The class will meet on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays, from 10.30 to 11.30 A.M., in Holden Chapel.*

The fee for this course is \$20. (See pages 21-22.)

For further information address the Instructor, Professor J. P. MARSHALL, 688 Boylston St., Boston, Mass.

## III. ADVANCED HARMONY

This course is practically a continuation of Course 1, and is designed for persons who have taken Course 1 or its equivalent. The work is similar to the work done in the second half-year in Music 1 at Harvard College, and includes Modulation, Leading Tone Seventh Chords, in major and minor keys, Ninth Chords, Altered Chords, and Suspensions. Considerable time will be spent in analyzing the works of classical composers, and in tracing the principles according to which they worked. Original work, such as part songs, songs for solo voice, and simple pieces for the piano-forte, is encouraged, and will receive careful criticism.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. A student may not count this course and also the regular course Music 1. (See page 16.)

*The class will meet on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays, from 11.45 A.M. to 12.45 P.M., in Holden Chapel.*

The fee for this course is \$20. (See pages 21-22.)

For further information address the Instructor, Professor J. P. MARSHALL, 688 Boylston St., Boston, Mass.

## IV. SCHOOL MUSIC

This course is designed to meet, in a practical way, the needs of supervisors and grade teachers, and to prepare students to become supervisors of music.

It will be presented under four divisions as follows: I, Methods; II, Elementary Theory and Sight Singing; III, Chorus Conducting and Musical Interpretation; IV, Lectures on vital topics of general interest, and Demonstration Lessons. Under the heading, Methods, all the problems of music instruction in the Primary, Lower Grammar and Upper Grammar Grades, and High School will be discussed, and practical plans for teaching the technical subjects in those departments will be presented in detail. In order that the course may be made as helpful as possible, Round Table and Question and Answer meetings will be held. The course will not be confined to any particular method, or series of books, but will present the fundamental principles of school music instruction in their broadest signification, preparing the student to meet the requirements of any of the standard school music publications. The background of school music instruction should be the development of an intelligent appreciation of good music; therefore the course will illustrate the application of the principles of Musical Appreciation to music study in the Grades and the High School.

*This class will meet for an hour and a half five times a week for six weeks at 2.30, in Holden Chapel.*

The fee for the course is \$25. (See pages 21-22.)

For information address the Instructor, Mr. OSBOURNE MCCONATHY, 37 Parker Street, Chelsea, Mass.

---

 PHILOSOPHY

RALPH BARTON PERRY, Ph.D., *Assistant Professor of Philosophy.*

GEORGE CLARKE COX, A.M., *Assistant in Philosophy.*

HORACE MEYER KALLEN, Ph.D., *Assistant in Philosophy.*

Two courses in Philosophy will be given in 1909, beginning Wednesday, July 7, and closing Wednesday, August 18: (1) A General Introduction to Philosophy, intended to acquaint the student with the tradition, standpoint, and fundamental problems of philosophy.

(2) An Introduction to Ethics, dealing with the meaning of morality, and the methods of inculcating and promoting it. Both of these courses will continue throughout the term of the school. Either of them may be taken alone; neither presupposes any previous study of Philosophy.

For students of Harvard University, except Seniors, who fulfil the conditions stated on pages 15-16, either of these courses may be counted as a half-course towards the degree of A.B. or S.B.; but the first may not be counted by a student who proposes to count Philosophy *D*.

For *Seniors in Harvard College* neither of the courses alone can be counted towards a degree; but the two together will be counted as a half-course.

Students of Harvard University who have taken both of these courses, or either of these courses together with one of the psychological courses, will be admitted to the higher courses, for Undergraduates and Graduates, offered by the Division of Philosophy.

The fee is \$20 for each course. (See pages 19-20.)

## S1. GENERAL INTRODUCTION TO PHILOSOPHY

It is the purpose of this course to introduce the student to the tradition, literature, and problems of philosophy. No previous study of the kind will be assumed. The lectures will deal, in the first place, with the general problem which distinguishes philosophy from other interests; with the philosophical standpoint, method, and habit of mind. In this connection the relation of philosophy to common sense, to morals, art, science, and religion, will be discussed at some length. The remainder of the course will be devoted to two broad problems. The first of these is the problem of man, embracing his natural origin, his distinctive capacities, the conditions and instruments of his knowledge, the meaning and implications of his moral powers. The second is the problem of God, embracing conceptions of the Absolute Being, proofs of God, the unity of the world, and the meaning of evil.

In discussing these questions the lecturer will expound and criticise the doctrines that have been most important in the history of human thought, such as materialism, subjectivism, and idealism. The course is intended to give to teachers or other students a just

estimate of the importance of philosophy for life, to give them some working knowledge of the results of philosophical investigations, and to enable them to read the works of contemporary thinkers with intelligence and a measure of critical independence.

Perry's *Approach to Philosophy* will be used as a text-book, with collateral reading in James's *Will to Believe* and *Pragmatism*. Other reading will be selected from the writings of Plato, Hobbes, Descartes, Locke, Berkeley, Schopenhauer, Royce, and Santayana.

This course is the equivalent of Philosophy D of the Harvard Courses of Instruction, and is accepted as a half-course for the bachelors' degrees in Harvard University. (See above and page 16.)

*The course will meet for one hour five times a week at 11 A.M., in Emerson A.*

The fee is \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Professor RALPH BARTON PERRY, 104 Lake View Ave., Cambridge, Mass.

## S2. INTRODUCTION TO ETHICS

Two topics will be dealt with in this course: (1) *the meaning of morality*; (2) *methods of inculcating and promoting morality*.

1. In discussing *the meaning of morality*, the lecturer will define goodness, discuss its basis or ground of appeal, distinguish certain virtues or typical forms of good conduct, and apply the fundamental principles thus obtained as tests of civilization and progress.

2. Three *methods of inculcating and promoting morality* will receive consideration: *education, art, and religion*. These special topics will involve an examination of the various influences that may be exerted to modify character and social tone.

In case Perry's *Moral Economy*, now in preparation, is ready it will be used as a text for the first topic. Otherwise there will be substituted selected readings from Plato's *Republic*, and from James's *Will to Believe*, Palmer's *Nature of Goodness*, and Santayana's *Life of Reason*. For the second topic the reading will be taken mainly from McDougall's *Introduction to Social Psychology*, with additional selections from Royce's *Philosophy of Loyalty*, and McCunn's *Making of Character*.

This course is accepted as a half-course for a bachelor's degree in Harvard University. (See above and page 16.)

*The course will meet for one hour five times a week at 10 A.M., in Emerson A.*

The fee is \$20. (See pages 21-22.)

For further information concerning this course address the Instructor, Professor R. B. PERRY, 104 Lake View Ave., Cambridge, Mass.

### PHYSICAL EDUCATION

DUDLEY ALLEN SARGENT, M.D., S.D., *Director of the Hemenway Gymnasium.*

Though these courses are designed especially for instructors engaged in teaching through the winter, and to supplement courses given during the school year, they are open also to all students and others seeking their personal improvement either by exercise or in learning how to look after their physical welfare.

The exercises are conducted in the Hemenway Gymnasium, on the adjoining grounds, and in the lecture halls of the University, under the direction of Dr. D. A. SARGENT, who takes part in both the theoretical and practical instruction.

*Attention is called to "Special Features for 1909," p. 114.*

Some of the Special Lecturers have been: —

Dr. MARSHALL H. BAILEY, *Medical Adviser*, Harvard University.

Dr. S. P. BEEBE, M.S., Ph.D., Cornell Medical School, New York, N.Y.

Dr. CLARENCE J. BLAKE, *Professor of Otology*, Harvard Medical School.

Dr. ELLIOTT G. BRACKETT, *Instructor in Orthopedics*, Harvard Medical School, and *Surgeon*, Children's Hospital, Boston.

Dr. EDWARD H. BRADFORD, *Professor of Orthopedics*, Harvard Medical School, and *Surgeon*, Children's Hospital, Boston.

Dr. WALTER CHANNING, *Director*, Private Hospital for Mental Diseases, Brookline.

Miss MARY EMMA CONNER, B.S., *Instructor in the Philosophy of Education*, Dr. Sargent's Normal School, Cambridge.

Mr. W. L. COOP, *Mechanical Engineer*, Narragansett Machine Co., Providence, R.I.

Dr. GEORGE VAN NESS DEARBORN, *Professor of Physiology*, Tufts Medical School.



- Dr. GEORGE W. FITZ, formerly *Assistant Professor of Physiology and Hygiene* and *Medical Visitor*, Harvard University.
- Dr. FREDERICK J. GOODRIDGE, *Physician*, Cambridge.
- Dr. EDWARD M. HARTWELL, *Secretary*, Bureau of Municipal Statistics, Boston.
- Dr. FRED E. LEONARD, *Professor of Physiology* and *Director of Gymnasium*, Oberlin College, Oberlin, Ohio.
- Dr. ROBERT G. LORING, *Eye Specialist*, Boston.
- Dr. ROBERT W. LOVETT, *Instructor in Orthopedics*, Harvard Medical School, Boston.
- Dr. JAMES H. MCCURDY, *Instructor in Physiology*, International Y. M. C. A. Training School, Springfield.
- Dr. R. TAIT MCKENZIE, *Physical Director*, University of Pennsylvania.
- Dr. GEORGE L. MEYLAN, *Physical Director*, Columbia University.
- Dr. MARY REES MULLINER, *Specialist*, Medical Gymnastics, Boston.
- Mr. HARTVIG NISSEN, *Supervisor of Physical Training*, Public Schools, Brookline.
- Mr. ARTHUR ORLO NORTON, A.M., *Assistant Professor of the History and Art of Teaching*, Harvard University.
- Dr. PEIRSON S. PAGE, *Physical Director*, Phillips Academy, Andover.
- Dr. JANE KELLY SABINE, *Assistant*, N. E. Hospital for Women and Children, Boston.
- Mr. CARL L. SCHRADER, *Instructor in Gymnastics*, Harvard University, and Dr. Sargent's Normal School, Cambridge.
- Dr. MYLES STANDISH, *Assistant Professor of Ophthalmology*, Harvard Medical School, Boston.
- Mr. R. CLIPSTON STURGIS, *Architect*, Boston.
- Dr. FREDERIC W. TAYLOR, *President, Board of Trustees*, Cambridge School of Nursing.
- Dr. SAMUEL G. WEBBER, *Consulting Physician*, Adams Nervine Asylum; *Lecturer on Nervous Diseases*, Tufts College Medical School, Boston.

The Special Instructors in 1907 were: —

- Mr. EMILE A. BARRIER, *Physical Director*, Y. M. C. A., Hyde Park.
- Mr. ALFRED BRODBECK, *Physical Director*, Cincinnati Athletic and Gymnastic Club, Cincinnati, O.
- Miss SAIDA R. BRINCK, *Instructor in Physical Training*, High School, Indianapolis, Ind.
- Mr. LOUIS R. BURNETT, *Physical Director*, Public Gymnasium, Milton.
- Mrs. ALICE P. CODDINGTON, *Pianist*, Boston.
- Miss IDA CROWLEY, *Pianist*, Cambridge.
- Mr. FRANCIS DOHS, *Instructor in Gymnastics*, U. S. Military Academy, West Point, N.Y.
- Miss DOROTHY ELLINGWOOD, *Physical Director*, Cook County Normal School, Chicago, Ill.

- Mrs. MAY L. FARWELL, *Pianist*, Boston.  
 Mr. MELVIN B. GILBERT, *Principal*, The Gilbert Normal School of Dancing and Esthetic Gymnastics, Boston.  
 Miss HELEN JONES, *Pianist*, Cambridge.  
 Mr. JAMES G. LATHROP, *Physical Director*, Worcester Academy, Worcester.  
 Mr. CHARLES B. LEWIS, *Physical Director*, Tufts College.  
 Miss ANNA SOPHIA MACDUFFEE, *Instructor in Physical Training*, Detroit Seminary, Detroit, Wis.  
 Mr. HARTVIG NISSEN, *Supervisor of Physical Training*, Public Schools, Brookline.  
 Mr. WILLIAM A. PAULL, *Instructor in Voice Culture and Church Music*, Episcopal Theological School, Cambridge, Mass.  
 Mr. HOWARD R. REITER, *Physical Director*, Wesleyan University, Middletown, Conn.  
 Mr. CARL L. SCHRADER, *Instructor in Gymnastics*, Harvard University, and Dr. Sargent's Normal School, Cambridge.  
 Miss HARRIET M. TOLMAN, *Instructor*, Dr. Sargent's Normal School, Cambridge.  
 Mr. C. B. VAN WYCK, *Recorder*, Hemenway Gymnasium, Cambridge.  
 Miss JENNIE BLANCHE WILSON, *Superintendent and Instructor*, Dr. Sargent's Normal School, Cambridge.

The Student Assistants in 1908 were : —

Mr. ERNEST ARTELL BLOOD, Mr. WILBUR WADE CARD, Mr. ERNEST ARTHUR CHAPMAN, Mr. WILLIAM W. COOK, Miss MARIAN THORNECROFT FESSENDEN, Miss MILICENT HOSMER, Mr. THOMAS G. MACDONALD, Miss FLORENCE ROBERTS SKINNER, Mr. J. MYRON WALDORF.

Special lecturers and instructors for the summer session of 1909 will be announced later.

## SPECIAL FEATURES FOR 1909

### COURSES FOR PLAYGROUND TEACHERS

The rapidly increasing demand for teachers who are qualified to take charge of Playgrounds has induced the Director of the Summer School for Physical Education to offer a special course for this purpose. In this course, the following general subjects will be considered : —

The Philosophy of Play, the Aims and Purposes of the Playground, Organization, Construction and Equipment; Administration and Management.

*Playground Activities.* — Rhythmic Movements, Games, Plays, Sports, and Festivals. The Playground as a Social Centre.

*The Philosophy of Play.* — Consideration of the theories of Herbert Spencer, Schiller, Froebel, Groos, and others. Play as a psychological, physiological and educational agent in the development of the child, and as a moral, religious, and political factor in the preservation of the Commonwealth.

*The Aims and Purposes of the Playground.* — Play being the normal life of the child — the means by which it grows and develops into a healthy and efficient adult — a proper place to play becomes a matter of the greatest importance. The building of the city and the tendency of mankind to herd together for social, industrial, and commercial purposes, has, for economic reasons, deprived the children of their playgrounds. With the loss of the playground has gone the loss of sunlight, air and an opportunity for free mental, moral, physical and social development. One of the purposes in re-establishing the playground is to restore and provide these rights and privileges to the younger generation. A second purpose must be to provide as many of the refining influences of the home as can be included by the playground teacher. The playground is the means par-excellence of representing the home in the educative process. (See Social Work of the Playgrounds.)

*Organization, Construction, and Equipment.* — Brief history of the playground movement. Consideration of means and methods of starting, securing and organizing playgrounds. Selection of site. Nature of soil and material used. Plan of construction, sand boxes, indoor and outdoor gymnasiums, dressing rooms, swimming pools, bathing facilities, running tracks, places for games and field sports.

Location and arrangement for special features.

The nature and extent of the equipment; the relative value of wood and iron for supports and for apparatus. The value of shelter from rain and too much sunlight. Location of apparatus, care of permanent and portable equipment, the best means of checking abuses in the use of apparatus, etc.

*Administration and Management.*—Should Playground be managed by Park Commissioners, School Boards, Municipal Officials or Philanthropic Societies? The great need of trained supervisors: directors and instructors; the necessary qualifications for playground officials; the importance of the division of duties and responsibilities; the selection of leaders; the organization of groups and teams; the selection of competitive events; the establishment of playground rules and regulations; the necessity for coöperation in order that playgrounds may be cared for and preserved; obedience to the rules of the “game” the first essential as a preparation for citizenship.

*Playground Activities.*—Rhythmic movements—their value and importance in a scheme of education.

*Rhythmical Gymnastics.*—Dalcroze method. Jaques Dalcroze, a Swiss composer, conceived the idea that bodily activity might be rendered serviceable in the musical training of children. The same method was later developed into a means of mental and physical training.

*American School Dances.*—A new series of rhythmic steps and movements composed by Mr. Gilbert for Schools and Playgrounds. They are simple, joyous exercises arranged in Progressive series, set to inspiring music, and adapted to the use of large classes.

*Folk Dances.*—Symbolic and Pantomimic dances of English, Scotch, German, French, and Swedish adoption. Figure dances arranged with songs, and suggestive of season, trades, occupations, and ceremonials of various descriptions.

*National Character Dances.*—Various national characteristics find expression in dances such as the Irish Jig, Scottish Reel, Spanish Fandango, Italian Tarantella, Japanese Fan Dance, Bohemian Bavorak and Hungarian Czardash.

*Games.*—Games of simple activities without definite educative purposes. The children with joined hands are led while walking, running, or skipping through various figures. Tower of Babel, mystic maze, sea-serpent, etc., are games of this nature.

*Games of Imitation.*—In these games, many of which were originated by Froebel, the various activities of trades, sports and habits are imitated. Examples of these are: The Seven Sons of Adam, The Water Mill, The Farmer, The Sewing Circle, etc.

Resting and relaxing periods after strenuous action and during the warmest part of the day. Test of power to keep quiet, whispering games, action without being heard, listening to music and getting the story in it.

*Quiet Games.* — The players are either seated or standing still and the games are more for training in attention, observation, and quick thinking. Guessing games, teasing games and games of patience come under this head.

*Story Telling Period.* — A definite use of the quiet time for impression of social, ethical and moral ideas by the means of "indirection." Stories for children of different ages and interests. The story the means of stimuli of refined action.

*Games for the Senses.* — The players are to recognize each other by the sense of hearing or touch, while being blindfolded. The organ builder; Jacob, where art thou?; and Guess who I am; — are games of this type.

*Organized Games* — such as Captain Ball, Centre Ball, Basket Ball, Baseball, Football, etc.

*Social Work.* — It has been the experience of many playground teachers to have to consider the most personal problems of family life. These problems can only be solved through an understanding of interdependence of health and morality. The playground teacher as a social worker in closer contact with the home than any other social worker, needs a general knowledge of health and hygiene and of common-sense means of getting them for the children, through such advice and help as can be given to mothers.

#### SPECIAL CIRCULAR

The following abstract is taken from the special circular on Physical Training to which the reader is referred for a more detailed description of the work of the courses. See page 126.

#### ELEMENTARY AND ADVANCED COURSES

The development of the subject of Physical Training during the past few years has made it impossible to cover the ground, even superficially, in a single season.



The improved facilities at the Hemenway Gymnasium enable the University to offer four full courses in the theory and four in the practice of Physical Training each summer.

The first course is for beginners or for students who have had little experience; the second course is for intermediate pupils or for those who are well grounded in the elementary work; the third course is for advanced pupils; and the fourth course is for graduate students who wish to acquire a teacher's experience and to specialize in those subjects for which they are best fitted.

### STUDIES AND EXERCISES OFFERED

The work of each year may be selected from the following lists and counted towards the full certificate as explained below.

#### FIRST YEAR

##### *Theory*

Lectures and Recitations on the elementary essentials of Anatomy, Histology, Physics, and Chemistry, as applied to Physical Training.

##### *Practice*

Primary and Grammar School Exercises, Calisthenics and Light Gymnastics, including drills in Chest Weights, Wooden and Iron Dumb-bells, Facings and Marching in Military Drill, Free Developing Exercises, Elementary Fencing, Dancing Steps, and Swedish Free Exercises. Elementary Heavy Gymnastics, including four series of progressive exercises on Low and High Horizontal Bars, Floor Parallel and Suspended Parallel Bars, Vaulting Horse, Buck, Rings, and Mat. Gymnastic Games, Delsarte Exercises, and Voice Training, expert instruction in Swimming, Diving, and Basket-ball.

#### SECOND YEAR

##### *Theory*

Lectures and Recitations in the elements of Physiology, Applied Anatomy, Anthropometry, and the Physiology of Exercise. Lectures and Practice in First Aid to the Injured. Brief History of Physical Education. Practical Talks on Personal Hygiene. Lectures on the Philosophy of Exercise and the Different Systems of Physical Training.

*Practice*

Intermediate courses in Light Gymnastics, including drills in Wands, Wooden Dumb-bells and Indian Clubs. Dancing, Fencing, Figure Marching, Swedish Gymnastics, and School Desk Exercises. Developing Appliances. Elementary Heavy Gymnastics and Athletics for Women, Intermediate Heavy Gymnastics for Men, including Exercises on the Parallel and Horizontal Bars, Vaulting Horse, Buck, Rings and Mat. Voice Training. Gymnastic Plays and Games. Expert instruction in Golf, Tennis, and Hand-ball.

## THIRD YEAR

*Theory*

Elementary Principles of Psychology as Applied to Physical Training. Outline of Physical Examinations and Examiner's Report. Lectures on Massage and its Applications. Important Epochs in the History of Education. Spinal Curvature and its Treatment by Gymnastics, with Hospital Practice. Preliminary Tests of Vision and Hearing. Essential Points in the Study of Children. Training in Theory and Practice. Organization, Construction, and Equipment of Gymnasiums and Athletic Grounds.

*Practice*

Advanced Light and Heavy Gymnastics, including drills in Wooden and Iron Dumb-bells and Chest Weights. Horizontal Bar, Parallel Bars, Horse, Buck, Rings, etc. Advanced Fencing, Dancing, and Athletics. Boxing, Swimming, and the Holds and Breaks in Wrestling. Intermediate Athletics for Women, including Running, Jumping, Hurdling, and Practice with Six-pound Shot. Corrective Gymnastics. Advanced Voice Training, Plays and Games, Practice in Measuring, Testing, Tabulating and Charting. Expert instruction in Rowing Strokes, and Foot-ball Plays and Formations.

## FOURTH YEAR

*Theory*

Some of the Essential Elements in Physical Diagnosis. Simple School Experiments in Physiology and Psychology. Kinesiology, Mechanotherapy, and Remedial Exercises. General View of the Practice and Principles of Teaching. Lectures on Vision and Hear-

ing with Practice in making Preliminary Tests. Inspection of Teeth, Nose, and Throat. Important Points in School Hygiene. The Influence of Physical and Mental Exercise on the Special Functions of Women. The Disorders of Children susceptible to Physical Treatment. Administration and Management of School, College, and Y. M. C. A. Gymnasiums and Athletic Associations.

### *Practice*

Methods and Practice in Teaching. Advanced Drills in Wands, Indian Clubs and Bar Bells. Advanced Work in Heavy Gymnastics and Athletics. The most approved forms of active and resistive exercises as applied in Medical Gymnastics. Assault Fencing, Advanced Dancing, Tumbling, and Posturing. Original Class Drills by Pupils with Wands, Dumb-bells, Indian Clubs, Free Exercises, etc. Practice in Teaching Heavy Gymnastics with instruction as to the best Methods of assisting Pupils. Practice in conducting Gymnastic Exhibitions, Athletic Meetings, Games, etc.

## THE REQUIRED STUDIES AND EXERCISES

### First Year

THEORY	PRACTICE
Anatomy.	Swedish Free Movements.
Histology.	Military Marching.
Personal Hygiene.	Wooden Dumb-Bells.
	Swedish Stall Bars.

### HEAVY GYMNASTICS

<i>Men</i>	<i>Women</i>
Vaulting Bar.	Vaulting Bar.
Parallel Bars.	Balance Swing.

### Second Year

THEORY	PRACTICE
Physiology.	Free Exercises.
Applied Anatomy.	Short Wands.
Anthropometry.	Chest Weights.
Physiology of Exercise.	Fencing.
Emergencies.	

History of Physical Education.

## HEAVY GYMNASTICS

<i>Men</i>	<i>Women</i>
Vaulting Horse.	Gymnasium Ladders.
Horizontal Bar.	Parallel Bars.
Two Athletic Games.	Two Gymnastic Games.
Track and Field Athletics.	

## Third Year

THEORY	PRACTICE
Psychology.	Indian Clubs.
Physical Examinations.	Iron Dumb-bells.
History of Education.	Dancing Steps.
Philosophy of Exercise.	Field Athletics.
Organization, etc.	

## HEAVY GYMNASTICS

<i>Men</i>	<i>Women</i>
Horizontal Bar.	Suspended Rings.
Two Antagonistic Exercises.	Swedish Boom.
Tumbling and Mat-Exercises.	

## Fourth Year

THEORY	PRACTICE
Physical Diagnosis.	Bar Bells.
Experimental Research.	Indian Clubs.
Practice and Principles of Teaching.	Aesthetic Dancing.
Administration.	Corrective Gymnastics.

<i>Men</i>	<i>Women</i>
Track and Field Athletics.	
Two Athletic Games.	
Two Gymnastic Games.	
Rowing and Swimming.	

The above list of required studies and exercises need not necessarily be taken or finished in the years to which they are assigned.

The general subjects in which examinations are held are as follows, with the number of points of credit towards a total of 400 which will be allotted to each : —

## SUMMARY OF COURSES

*Giving total number of Credit Points allowed for each group of  
Studies and Exercises*

## SUBJECTS IN THEORY\*

1. Preparatory Studies . . . . .	25
2. Fundamental Studies . . . . .	70
3. Hygiene . . . . .	40
4. Physical Examinations . . . . .	55
5. Kinesiology . . . . .	50
6. Mechanotherapy . . . . .	60
7. Philosophy of Exercise . . . . .	20
8. Theory of Athletic Training . . . . .	25
9. Emergencies and First Aid . . . . .	15
10. Pedagogics . . . . .	50
11. Experimental Research . . . . .	50
12. Environment . . . . .	20
13. Organization, etc. . . . .	20
Total number of points for Theory . . . . .	500

## WORK IN PRACTICE\*

14. Calisthenics . . . . .	60
15. Light Gymnastics . . . . .	60
16. Swedish Gymnastics . . . . .	60
17. Gymnastic Games . . . . .	36
18. Heavy Gymnastics . . . . .	70
19. Athletic Games . . . . .	58
20. Track and Field Sports . . . . .	60
21. Antagonistic Exercises . . . . .	40
22. Developing Appliances . . . . .	20
23. Individual Accomplishments . . . . .	36
Total number of points for Practice . . . . .	500
24. Personal Qualifications . . . . .	200
Total number of points . . . . .	1200

## ESSENTIALS OF A TECHNICAL EDUCATION IN PHYSICAL TRAINING

It would hardly seem necessary to state that the pupils in Physical Training are not expected to become profound students in all of the subjects set forth in the four-year Summer School schedule, nor are they expected to qualify themselves to teach Anatomy, Physiology,

\* For descriptions of these courses, see the "Special Circular" mentioned on page 126.



Psychology, Physics, Chemistry, etc., in the brief time allotted to these studies.

It is absolutely necessary, however, that these technical pupils have some knowledge of some parts of such fundamental subjects, in order properly to qualify themselves to understand and to teach Physical Training in its broadest acceptation. It is also necessary that they should know something of the rudiments of correlated subjects, in order that they may be able to adapt their work to other departments of Education.

### GRADED COURSES

The object of introducing Graded Courses into the Summer School work is to enable students and instructors, who are engaged in teaching throughout the year, to enter upon a thorough and systematic study of Physical Training, which can be carried on consecutively from one summer season to another until they cover ground enough to entitle them to a first-class certificate.

This method meets the objections so often brought against summer schools, "that they are necessarily superficial," and enables the student by lessening the number of his subjects, and extending the time devoted to them, to make thorough work of his course, while he is constantly supplementing it by his experience in teaching.

### SPECIAL COURSE FOR MEN

The purpose of this course is to train teachers of practical gymnastics in colleges, preparatory schools, Young Men's Christian Associations, and athletic clubs. This course has been given since 1898 as a two-year course. This year it is re-arranged to correspond with the regular four-year programme of the School.

The instruction of the first year will include drills in chest weights, wooden and iron dumb-bells; four series of progressive elementary exercises on low and high horizontal bars, parallel and suspended parallel bars, horse, buck, rings and mat; also three gymnastic games.

The second year's instruction will consist of drills in wands, wooden dumb-bells and Indian clubs; three series of intermediate exercises on the same eight pieces of apparatus as the first year; and three gymnastic games.

The third year will include drills in wooden and iron dumb-bells, and chest weights; three more intermediate series on the apparatus; and three gymnastic games.

In the course for the fourth year will be drills in wands, Indian clubs and short bar bells; two series of advanced exercises on the apparatus; and three gymnastic games.

This course has been used successfully in a number of colleges, preparatory schools, Young Men's Christian Associations, and athletic clubs for several years; it is particularly recommended to those who teach classes of young men and boys.

#### PARALLEL COURSES FOR MEN AND WOMEN

Although many of the courses may be taken in common by men and women, it has been deemed advisable to limit the heavier forms of gymnastics, athletics, and antagonistic exercises to men, while the lighter calisthenics, Delsarte exercises, elementary apparatus work and aesthetic dancing are adapted and confined largely to women.

Where men are expected to instruct women, and women are called upon to teach men and boys, as is the case in many of the State Normal Schools, a judicious selection from both programmes will be allowed in order to meet the requirements of the teacher's position.

#### REQUIREMENTS

Candidates for full certificates will be required to attend at least two full sessions in Theory and Practice and pass examinations in a sufficient number of subjects in the same to receive a total credit of 400 points.

A certain number of points are allotted to each subject. Any pupil doing excellent work will receive the highest mark allotted to that subject. A person doing very good work will receive the next lower mark. A pupil doing good work will receive the next lower, while a pupil who does only fair or passable work will receive the lowest mark given for that subject.

Excellent or finished work is not expected of Summer School pupils, unless they have had much previous instruction or experience in teaching the subject.

In this case due credit will be given, whether the instruction has been given at the Harvard Summer School or elsewhere.

### CERTIFICATES

All students desiring to receive full certificates from the University will be required to complete four full Summer Courses, or to pass examinations in the Theory and Practice of the first, second, and third-year courses before being admitted to the fourth-year course.

Students who have taken the full Summer Course at Harvard in any previous year, or students who have spent one or more years at any other Normal School of Physical Training in good standing, will be admitted without examination to the second, third, or fourth-year course according to the amount of work they have done, and the subjects they are qualified to pursue.

Students wishing to receive credit for work done at other schools will be expected to present their certificates, with statements of the amount and character of work accomplished, at the commencement of the course, or to pass examinations on those subjects in which they wish to pursue advanced courses.

Entrance examinations for the different courses will be held at the Hemenway Gymnasium on the morning of July 7, beginning at 9 o'clock.

Final examinations will be held at the Gymnasium on the week following the close of the regular five weeks' course.

Pupils who have attended previous Summer School courses at Harvard, but who have not received full certificates, are entitled to have their present standing adjusted in accordance with the new system of credits.

### CREDIT POINTS

In making up the total of 400 credit points, the minimum requirement for a full certificate, the pupil is advised that he will be expected to make at least 100 points in Theory, 100 points in Practice, and 50 points in Personal Qualifications. The remaining 150 points may be made up in any one of the above groups of subjects or in all combined.

## CERTIFICATES OF ATTENDANCE

Special students who do not desire to take the examinations given at the end of each Summer's Course may be furnished with a certificate of attendance, if they have taken the full course for that year in Theory and Practice, and participated in all of the regular exercises.

## PRACTICE AND THEORY COURSES

Persons taking the Practice Course only, or the Theory Course only, in any single year, are not expected to teach and will not be entitled to a certificate. Those who have taken courses in Theory or Practice in any of the previous sessions of the Harvard Summer School and done satisfactory work in the same, may have these courses credited towards the eight courses required for a full certificate should they desire to qualify for one.

## TERM AND FEES

The instruction in Physical Education will begin Wednesday, July 7, and end Wednesday, August 11, 1909. Saturday forenoons will be utilized for instruction during the first five weeks. The examinations will begin Thursday, August 12, and end on Saturday, August 14, 1909.

*Fees:* Full course, including Theory and Practice, each year, \$50; Theory, or Practice, each, \$25. (See pages 21-22.)

## SPECIAL CIRCULAR AND APPLICATION BLANK

A *Special Circular* containing further particulars, and application blank will be furnished on application to the Director, Dr. D. A. SARGENT, Cambridge, Mass. Applications should be returned by those intending to enter, with a statement of courses selected, before the first of July.

# PROVISIONAL SCHEDULE — THEORY AND PRACTICE

Hour	First Year	Second Year	Third Year	Fourth Year
9-10	Histology	Physiology	Physiology of Exercise History of Physical Education	Methods of Teaching Philosophy of Education
10-11	Anatomy	Applied Anatomy Anthropometry	Physical Diagnosis Construction & Equipment Nomenclature	Special Lectures Medical Gymnastics
2-3		First Aid Special Lectures	Massage Prescription	
11-11	Fencing	Clubs, T. Th. S. Swedish, M. W. F.	Games, M. W. F. Marching Tactics, T. Th. S.	Marching Tactics, M. W. F. Games, T. Th. S.
11.25-11.45	Clubs, M. W. F. Swedish, Tumbling, T. Th. S.	Fencing	Apparatus (men) " (women)	Apparatus (men) " (women)
11.50-12.10	Calisthenics, T. Th. S. Marching Tactics, M. W. F.	Fancy Steps, T. Th. S. Bounding Ball, M. W. F. Tumbling, M. W. F.	Swedish Tumbling, T. Th. S.	Military Drill, T. Th. S. Games, M. W. F.
12.15-12.35	Wands, T. Th. S. Dumb Bells, M. W. F.	Wands, T. Th. S. Dumb Bells, M. W. F.	Clubs, M. W. F. Wands, T. Th. S.	Fencing, M. W. F. Clubs, T. Th.
12.40-1	Apparatus (men) " (women)	Apparatus (men) " (women)	Fencing	Clubs, M. W. F. Special, T. Th.
2.30-3	Dancing	Voice Training	Dancing	Dancing
3-4	Foot Ball	Foot Ball	Foot Ball	Foot Ball
3-3.30	Voice Training	Dancing	Dancing	
3.30-4.30	Athletics (women)	Athletics (women)	Athletics (women)	Athletics (women)
4-5	Boxing, Wrestling (men)	Boxing, Wrestling (men)	Boxing, Wrestling (men)	Boxing, Wrestling (men)
4.30-5.30	Hockey, Tennis (women)	Hockey, Tennis (women)	Hockey, Tennis (women)	Hockey, Tennis (women)
5-6	Track Athletics (men)	Track Athletics (men)	Track Athletics (men)	Track Athletics (men)



## PHYSICS

PERCY WILLIAMS BRIDGMAN, Ph.D., *Fellow for Research in Physics, and Assistant in Physics.*

HARVEY CORNELIUS HAYES, A.M., *Assistant in Physics.*

EMORY LEON CHAFFEE, S.B., A.M., *Assistant in Physics.*

Two courses in Physics will be given in the Jefferson Physical Laboratory, beginning Wednesday, July 7, and ending Wednesday, August 18, 1909.

Fee for each course, \$30. (See pages 21-22.)

## S.B. COLLEGE ADMISSION REQUIREMENTS IN PHYSICS.

This course is intended primarily for teachers of Physics in secondary schools. It covers the experiments required for preparation in Physics for admission to Harvard College and contained in the pamphlet issued by the University called a Descriptive List of Elementary Exercises in Physics. These experiments have also been adopted in the report of the Committee of Ten, and by the Association of Colleges and Preparatory Schools of the Middle States and Maryland.

The course is intended for teachers of the subject, and is conducted with special reference to their needs.

The course will consist of illustrated lectures (two each day), laboratory work (four hours each day), problems, and reading.

The laboratory work will consist of the following experiments in accordance with the above requirements: —

## MECHANICS AND HYDROSTATICS

## EXER.

1. Weight of unit volume of a substance.
2. Lifting effect of water upon a body entirely immersed in it.
3. Specific gravity of a solid body that will sink in water.
4. Specific gravity of a block of wood by use of a sinker.
5. Weight of water displaced by a floating body.
6. Specific gravity by flotation method.
7. Specific gravity of a liquid, — two methods.
8. The straight lever, — first class.
9. Centre of gravity and weight of a lever.
10. Force exerted at the fulcrum of a lever.
11. Errors of a spring-balance.

12. Parallelogram of forces.
13. Friction between solid bodies (on a level).
14. Coefficient of friction (by sliding on incline).
15. Breaking-strength of a wire.
16. Comparison of wires in breaking tests.
17. Elasticity, — stretching.
18. Elasticity, — bending; effect of varying load.
19. Elasticity, — bending; effect of varying dimensions.
20. Specific gravity of a liquid by balancing columns.
21. Compressibility of air, — Boyle's law.
22. Density of air.
23. Four forces at right angles in one plane.
24. Comparison of masses by acceleration-test.
25. Action and reaction, — elastic collision.
26. Elastic collision continued; inelastic collision.

#### LIGHT

27. Use of Rumford photometer.
28. Images in a plane mirror.
29. Images formed by a convex cylindrical mirror.
30. Images formed by a concave cylindrical mirror.
31. Index of refraction of glass.
32. Focal length of a converging lens.
33. Conjugate foci of a lens.
34. Shape and size of a real image formed by a lens.
35. Virtual image formed by a lens.

#### HEAT

36. Testing a mercury thermometer.
37. Linear expansion of a solid.
38. Increase of volume of a gas heated at constant pressure.
39. Specific heat of a solid.
40. Latent heat of melting.
41. Determination of the dew-point.
42. Latent heat of vaporization.

#### SOUND

43. Velocity of sound in open air.
44. Wave-length of sound.
45. Number of vibrations of a tuning-fork.

## ELECTRICITY AND MAGNETISM

46. Lines of force near a bar magnet.
47. Study of a single-fluid galvanic cell.
48. Study of a two-fluid galvanic cell.
49. Resistance of wires by substitution, — various lengths.
50. Resistance of wires by substitution, — cross-section and multiple arc.
51. Resistance by Wheatstone's bridge, — specific resistance of copper.
52. Temperature-coefficient of resistance in copper.
53. Battery resistance.
54. Putting together the parts of a telegraph key and sounder.
55. Putting together the parts of a small motor.

The laboratory hours will be from 9 A.M. to 12.30 P.M., and from 2 to 5 P.M., five days in the week. The laboratory will be open, for those desiring to work, from 8.30 A.M. to 1 P.M., and 2 to 5.30 P.M., and on Saturdays from 8.30 A.M. to 1 P.M.

The lectures will be given in Room 1, Jefferson Physical Laboratory, at 9 A.M. and 2 P.M.; the laboratory work will be done in Room 41.

This course corresponds in part to Physics *B* of the Harvard Catalogue. It is accepted as a half-course for the bachelors' degrees in Harvard University. It cannot be counted to remove a condition in Elementary Physics. A student may not be credited with this course and also with Physics *B*. (See page 16.)

The fee for this course is \$30. (See pages 21–22.)

The instruction in this course will be given by Messrs. H. C. HAYES and E. L. CHAFFEE.

For further information concerning the work of this course address either of the Instructors, Jefferson Physical Laboratory, Cambridge, Mass.

## SC. ADVANCED COURSE IN PHYSICS

The object of the course is not only to give skill in physical manipulation, but also to enable the student to familiarize himself with physical phenomena by personal observation and accurate measurement. The course should properly be preceded by some

elementary laboratory work, though it has been taken with profit by those not so trained who were familiar with the subject from text-book study.

The following partial list of the experiments will indicate the nature of the laboratory work : —

#### MECHANICS

Vernier gauge.  
 Micrometer gauge.  
 Spherometer.  
 Nicholson's hydrometer.  
 Specific gravity of a solid by Nicholson's hydrometer.  
 Reading by vibrations.  
 Sensitiveness of a balance.  
 Double weighing.  
 Weight in vacuo.  
 Density of a solid by submersion.  
 Capacity of a specific gravity bottle.  
 Density of a solid by the specific gravity bottle.  
 Force of gravity, by Bordas' pendulum.  
 Torsion pendulum : moment of torsion and moment of inertia.

#### SOUND

Pitch by the sonometer and by the siren.  
 Musical interval.  
 Velocity of sound in air by the resonance tube.  
 Velocity of sound in brass.  
 Organ pipes : overtones.  
 Helmholtz's analysis of sound.  
 Lissajous's Figures.

#### HEAT

Mechanical equivalent of heat.

#### LIGHT

The marine sextant; range finding.  
 Spectrometry; index of refraction.  
 Spectroscopy : flame, spark, vacuum tube, and absorption spectra.  
 Magnifying power of a telescope and opera glass.  
 Compound Microscope : equivalent focal length of object glass and eye piece.

Wave length of light by Newton's wings.  
 Wave length of light by the diffraction grating.  
 Rotation of the plane of polarization.  
 Photometry.

#### MAGNETISM AND ELECTRICITY

Magnetic lines of force.  
 $H$  by the magnetometer.  
 $H$  by the silver and by the gas voltameter.  
 Equipotential lines and lines of flow.  
 Wheatstone's bridge, wire and box form.  
 Battery resistance by the potentiometer.  
 Resistance by heating.  
 Dynamo.

The laboratory work will be accompanied by illustrated lectures and by problem work.

The lectures will be given in Room 25, Jefferson Physical Laboratory, at 9 A.M. and 2 P.M.; the laboratory work will be done in Room 41.

The laboratory hours will be from 9 A.M. to 12 P.M., and from 2 to 5 P.M., five days in the week. The laboratory will be open, for those desiring to work, from 8.30 A.M. to 1 P.M., and from 2 to 5.30 P.M., and on Saturdays from 8.30 A.M. to 1 P.M.

This course corresponds in part to Physics *C* of the Harvard Catalogue. It is accepted as a half-course for the bachelors' degrees in Harvard University. A student may not be credited with this course and also with Physics *C*. (See page 16.)

The fee for this course is \$30. (See pages 21-22.)

For further information concerning this course address the Instructor, Dr. P. W. BRIDGMAN, 507 Craigie Hall, Cambridge, Mass.

---

#### PSYCHOLOGY

ROBERT MEARNS YERKES, Ph.D., *Assistant Professor of Comparative Psychology.*

LAWRENCE WOOSTER COLE, A.M., *Instructor in Psychology, Wellesley College.*

The courses in Psychology will be given in the Psychological Laboratory, Emerson Hall, beginning Wednesday, July 7, and end-



ing Wednesday, August 18. Two courses are offered: S1, a lecture and demonstration course in Descriptive Psychology, and S2, a lecture and laboratory course in Applied Psychology.

Either of these courses may be taken alone, but as preparation for the Applied Psychology students should have either the Descriptive Psychology or its equivalent.

Students who have taken both of the courses in Psychology, or one of them and in addition one of the courses in Philosophy, will be admitted to the courses for Undergraduates and Graduates offered by the Division of Philosophy. Both S1 and S2 are accepted as half-courses for the degree of A.B. or S.B. in Harvard University.

The Psychological Library in Emerson Hall is open to members of the classes in Psychology.

#### S1.—DESCRIPTIVE PSYCHOLOGY. LECTURES, DEMONSTRATION EXPERIMENTS, AND CLASS DISCUSSIONS CONCERNING THE PRINCIPLES, METHODS, AND VALUES OF PSYCHOLOGY

The aim of this course is to give simply and clearly an account of the structure and growth of the mind, of the way in which it works, of its relations to the life of action, and of ways in which it may be trained.

Each member of the class is asked to observe certain of his own mental processes with a view to gaining knowledge of the nature of the important varieties of experience. The lectures constitute a systematic discussion of the important facts and methods of psychology. To render the materials under consideration intelligible to the beginner and interesting to all who take part in the work of the course, demonstration experiments are performed before the class almost daily. The lectures themselves are planned with the purpose of indicating the chief facts of mental development in the child and in the race, the characteristics of the various kinds of mental processes, the relation of mind to nature and its meaning for human life.

Throughout the lectures special attention is given to the significance of the facts under discussion, and to the training of the members of the course in methods of studying consciousness. In addition to presenting the groundwork of the science of psychology, the

course offers a discussion of the conditions which influence the growth and decay of our minds and of the means whereby desirable educational results may be attained.

Titchener's *Outline of Psychology*, Angell's *Psychology*, Calkins's *Introduction to Psychology*, and Judd's *General Introduction to Psychology* are used as text-books in the course, and for supplementary reading are recommended Royce's *Outline of Psychology*, Wundt's *Outline of Psychology*, MacDougall's *Physiological Psychology*, and James's *Principles of Psychology*.

This course is the equivalent of Philosophy *E* of the Harvard Courses of Instruction, and is accepted as a half-course for the degree of A.B. or S.B. in Harvard University. This course and Philosophy *E* may not both be counted for a degree. (See page 16.)

*The class will meet five times a week for six weeks from 9 to 10 A.M., in Emerson 27.*

The fee for this course is \$20. If taken with the course in Applied Psychology the fee for the two will be \$40. (See pages 21-22.)

For further information concerning this course address the Instructor, Professor ROBERT M. YERKES, Emerson Hall, Cambridge, Mass.

## S2.—APPLIED PSYCHOLOGY. LECTURES, LABORATORY EXERCISES, DISCUSSIONS, AND READING

The aim of this course is to exhibit the practical applications of the most important psychological facts and principles, and to aid teachers, physicians, lawyers, ministers, social workers, and students of psychology to appreciate the value of psychology for daily life, and to make effective use of their knowledge of the subject in their professional work.

The course consists of six parts:—

I. THE FACTS AND PRINCIPLES OF SENSE, with demonstrations of methods of testing sight, hearing, and the chemical senses, and lectures on the practical aspects of the care and education of the senses.

II. THE INTERPRETATION OF SENSE DATA (perception), with demonstrations of the influence of mental content, or past experience, upon our interpretation of present sense data, and a study

of some of the conditions which determine our mental attitudes. Illusions, delusions, and hallucinations are topics for discussion. Here again, as throughout the course, the instructor indicates, in his lectures, ways of developing and improving the ability of the individual to interpret sense experience.

### III. MEMORY AND IMAGINATION AS ASPECTS OF MENTAL LIFE.

Perceptual and memory types are exhibited in the class exercises, and the influence of various environmental factors on memory are demonstrated. Similarly the rôle of the creative imagination is studied in relation to the conditions which modify it and to its significance in human life. In the lectures attention is directed particularly to the problems of the development and training of the imagination.

IV. FORMS OF ACTIVITY AND THEIR RELATIONS TO MENTAL STATES. In this connection the development and modification of behavior is examined. It is the purpose of this section of the course to exhibit the essential features of automatism, habit, and intelligence, and to demonstrate certain of the powerful influences which are constantly at work as moulders of our lives. These facts are studied that we may learn how to control behavior in ourselves and in others by the aid of psychological principles.

V. SUGGESTION AND IMITATION. In this connection the laws of suggestion are demonstrated, and methods of measuring suggestibility are tested. The relation of suggestion to hypnosis, as well as to normal states, is discussed. Special attention is given in this portion of the course to the applications of psychology to law. The various forms of imitation are examined and their significance is considered.

VI. WILL. The development and control of voluntary action is studied. Special attention is given to volition in its relations to habit-formation, to motor education, and the efficiency of methods of training.

The lectures of the course are intended primarily to introduce and supplement the class exercises, but during the last two weeks of the term a special course of ten lectures is given in which the principal applications of psychology to the professions of teaching, medicine,

law, art, and religious and social service are presented and discussed. These lectures serve as a résumé and review of the chief results of the laboratory exercises, and, at the same time, they afford the instructor an opportunity to give the class a general view of the subject.

This course is accepted as a half-course for a degree in Harvard University. (See pages 16-19.)

*The class will meet five times a week for six weeks from 10 A.M. to 12 M., in Emerson 27.*

The fee for the course is \$25. If this course is taken with the course above in Descriptive Psychology, the fee for the two courses is \$40. (See pages 21-22.)

For further information concerning this course, address the Instructor, Professor ROBERT M. YERKES, Emerson Hall, Cambridge, Mass.

### PUBLIC SPEAKING, ORAL READING, VOICE TRAINING

IRVAH LESTER WINTER, A.B., *Assistant Professor of Public Speaking.*

PHILIP BENJAMIN KENNEDY, A.B., *Assistant Professor of Public Speaking (Beloit College).*

BERTEL GLIDDEN WILLARD, A.B., *Instructor in Public Speaking.*

WILLIAM HAWLEY DAVIS, A.M., *Assistant, formerly Instructor in Public Speaking.*

AUGUSTUS DILLON, A.B., *Assistant.*

JACOB CLOYD TRESSLER, A.B., *Assistant.*

Four courses in Public Speaking are offered in 1909. The work will begin on Wednesday, July 7, and end on Wednesday, August 18, except in Course S4.

These courses are conducted according to the methods employed in several departments of Harvard University and in Radcliffe College. The purpose is to afford assistance to teachers of speaking and reading, to teachers of English literature or composition, to lawyers or ministers, or to others who use the voice in professional work. The instruction is planned primarily for giving personal training to the students. Through this, however, methods of teaching may be acquired. The courses are practical, requiring of each student daily oral exercises. An especial aim is simplicity and

naturalness, and a preserving of individuality in the work of the student. The classes are arranged in small sections, allowing considerable attention to individuals. (See page 141.)

Any two of the courses (S1, S2, S3) may be together counted as a half-course toward the degree of A.B. or S.B., provided no course in Public Speaking in Harvard College has been so counted. If the summer courses are counted, no course can subsequently be counted in Harvard College.

### S1. DEVELOPMENT OF THE VOICE

This course is given mainly to vocal technique, and is intended to lay the foundation for more advanced work. It deals in a simple way with the physical conditions appertaining to correct voice production, and trains the vocal organs in right action for natural and effective speaking.

A system of vocal exercises is practised for acquiring control of breathing, free tone formation, easy variations of pitch, voice enlargement, and pure tone quality.

Selections of standard literature are used for applying the vocal principles to speaking and reading, and for practice in the simpler technique of expression: enunciation, inflection, phrasing, emphasis, modulation, expressive tone form and tone quality. Special attention is given to the correcting of individual vocal faults of the ordinary kind. Physical defects due to organic conditions cannot be corrected in class instruction.

The instruction in this course is given by Mr. WILLARD.

Any two of the Courses S1, S2, and S3 may be together counted as a half-course for a bachelor's degree (see above).

*The meetings of the course are from 11 A.M. to 12 M. daily except Saturday, in the New Lecture Hall.*

The fee for this course alone is \$20. If Course 2 or 3 is taken (see p. 140) with it, the fee is \$15 for each additional course. (See pages 21-22.)

### S2. PLATFORM READING

This course is designed for aiding teachers to acquire facility in class-room discussion and class-room reading — especially teachers of English who regard expressive reading by teacher and pupils as contributing materially to the results of literary instruction. The



literature taken up is representative of the expository or critical essay, the narrative in prose and verse, lyric poetry, and the drama. Some of the texts used are among those of the College Entrance Requirements in English. Students preparing for reading in a more public way may choose other literature.

Instruction is given in the principles of vocal expression. Literature is analysed for purposes of interpretation, and representative passages are assigned to the class for daily vocal practice in the expression of meanings, moods, and sentiments. Personages in story and the drama are studied, and suggestive representations of character are discussed and illustrated.

Subjects for discussion by members of the class are generally taken from the literature in hand, and readings are interspersed for illustrative purposes. A student who so prefers may practise wholly upon selected readings. Criticism is given by members of the class and by the instructor.

The literature to be used in this course in 1909 is as follows: —

Longfellow's *The Building of the Ship*.

Browning's *The Pied Piper of Hamelin* and *Hervé Riel*.

Tennyson's *The Passing of Arthur*.

Irving's *The Sketch Book*. (Selections.)

Milton's *L'Allegro* and *Il Penseroso*.

Shakspeare's *As You Like It*.

The instruction in this course is given by Professors WINTER and KENNEDY.

Any two of the Courses S1, S2, and S3 may be together counted as a half-course for a bachelor's degree (see above, p. 137).

*The meetings of the course are from 10 to 11 A.M., in Room 11, Sever Hall; at times in the New Lecture Hall.*

The fee for this course alone is \$20. If Course 1 or 3 is taken (see p. 140) with it, the fee is \$15 for each additional course. (See pages 21-22.)

### S3. PLATFORM SPEAKING

The end in view in this course is facility and effectiveness in the expression of one's own thought on occasions more or less public. The work of each individual may be adapted to his particular

needs. The members of this course have been largely ministers, lawyers, principals, and superintendents.

Instruction is given in voice, platform bearing and gesture, and matters connected with the speaker's personal relation to the audience. Selected speeches are studied with a view to the subject matter, the special occasion of the original delivery, and the character of the audience addressed, and typical parts are practised for working out appropriate variations in the manner of presentation. These speeches are in the form of the expository address, of the argument or debate, and of the light or humorous discussion or narrative.

The members of the class practise daily in delivering speeches from the platform; at times the longer, more carefully prepared and more formal address; more frequently the shorter, more informal speech. These speeches may be selected or original, — the latter either prepared or extemporaneous, — according to the needs or the choice of each student. Usually one or two formal debates are held. Criticism is given by members of the class and by the instructor.

The speeches to be used in this course in 1909 are, besides original speeches, as follows:—

The Lincoln-Douglas Debate. (Maynard's Classics.)

Curtis' The Public Duty of Educated Men.

Selected After-dinner Speeches.

The instruction in this course is given by Professors WINTER and KENNEDY.

Any two of the Courses S1, S2, and S3 may be together counted as a half-course for a bachelor's degree (see above, p. 137).

*The meetings of the course are from 9 to 10 A.M., in the New Lecture Hall.*

The fee for this course alone is \$20. If Course 1 or 2 is taken (see p. 140) with it, the fee is \$15 for each additional course. (See pages 21-22.)

#### S4. ORAL] READING OF ENGLISH CLASSICS

A course of fifteen lectures and illustrative readings, given by Professor WINTER.

Course 4 is offered especially for teachers of English who are interested in oral reading as a means of interpretation, but who may not wish to do the practical work of the other courses. It is, how-

ever, closely related to the other courses in that it presents somewhat systematically the principles of oral expression. The aim is, by discussion and illustration, to give practical aid in reading. The course may be taken in addition to any of the other courses and may be taken in addition to any other course in the Summer School. *It is intended particularly for teachers of English literature.*

The subjects of the lectures and readings for 1909 are as follows: —

1. July 14. Shakspeare's Merchant of Venice.
2. " 15. " " "
3. " 16. " " "
4. " 21. Webster's Reply to Hayne.
5. " 22. Selections from Curtis, Mark Twain, Artemus Ward.
6. " 23. Various dialects — prose and verse.
7. " 28. Shakspeare's Julius Caesar.
8. " 29. " "
9. " 30. " "
10. Aug. 4. Dickens' A Christmas Carol.
11. " 5. " "
12. " 6. " "
13. " 11. Shakspeare's Hamlet.
14. " 12. " "
15. " 13. Lowell's Vision of Sir Launfal; Short poems from Longfellow and Whittier.

*The meetings of this course will be on Wednesdays, Thursdays, and Fridays, at 12 o'clock, in Room 11, Sever Hall.*

*The Certificate of the Summer School is not given for this course.*

The fee for this course alone, including the registration fee of \$2, will be \$7. If taken with any other course in the Summer School the fee will be \$5. (See pp. 21-22.)

*A student who registers in this course only is not entitled to apply for the Auditor's privilege (see pp. 13, 21) in other Summer courses.*

---

Students taking Course 2 or 3 are generally advised to take also Course 1, unless they have had considerable vocal training. Students taking Course 2 may attend Course 3, and those taking Course 3 may attend Course 2, as auditors, without additional charge.

The time required for work outside of class hours is generally two or three hours daily for one course, and an additional hour or two daily for a second course. Suggestions are given for reading beyond the requirements.

If the number of students in Courses 2 and 3 is small, the two courses may be given as one, at 10 o'clock. Course 1 or 2 or 3 may, if the number of students is large, be given in two sections.

Occasional afternoon or evening lectures or readings are given, to which all members of the courses are invited.

Afternoon readings were given in 1908 by

Miss ELIZABETH GERTRUDE RYAN, *Teacher of Oral Expression*, Kemper Hall, Kenosha, Wis.

Mrs. WALDO RICHARDS, Boston.

For further information concerning these courses address Professor I. L. WINTER, Hubbard Park, Cambridge, Mass.

---

## ROMANCE LANGUAGES

EVARISTO HURTADO, D.D., *Instructor in Spanish*.

ALPHONSE BRUN, A.M., *Instructor in French*.

JOHN GLANVILLE GILL, Ph.D., *Instructor in Romance Languages*.

LOUIS ALLARD, Lic.-ès-lettres, Agrégé-des-lettres, *Instructor in French*.

ALEXANDER GUY HOLBORN SPIERS, A.M., *Instructor in Romance Languages*.

Five courses in Romance Languages are offered in 1909, beginning Wednesday, July 7, and ending Wednesday, August 18.

## FRENCH

### S1. INTERMEDIATE COURSE FOR TEACHERS AND THOSE PREPARING TO TEACH FRENCH

This course is suited to students who have already acquired a certain proficiency in French grammar and translation. The instructor will cover rapidly, for the benefit of teachers, the entrance requirements in French. Constant practice will be given in the translation of rather difficult texts, and in composition. While particular attention will be paid to works of the nineteenth century,

the course will close with the study of a few plays of the classic age, and a survey of the differences in the language of the two periods.

Students should procure Mansion's: *Extracts for French Composition* (Heath & Co.); Taine's: *Les Origines de la France Contemporaine* (Holt & Co.); Jules Lemaitre (Ginn & Co.).

Other books, chosen to meet the needs of the class, will be announced after the first meetings of the course.

This course is accepted as a half-course for the bachelors' degrees in Harvard University. (See page 16.) A student who has been credited with French 1a or 1b may not count this course; and those who afterwards take French 1a or 1b may count the latter as a half-course only.

*The class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 19.*

The fee for this course is \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Mr. A. G. H. SPIERS, 48A Conant Hall, Cambridge, Mass.

## FRENCH CONVERSATION AND COMPOSITION

This course is intended for students who have a good reading knowledge of French and have had some practice in hearing it. The most important principles of French grammar essential to the practical use of the language will be reviewed with the help of copious examples, and the main differences between French and English construction and idiom will be abundantly illustrated. Students will have constant practice in translating typical sentences from English into French, in furnishing oral and written paraphrases and synopses, and in answering questions in French. The ear will be trained also by frequent dictation exercises. Attention will be paid to pronunciation. During the last two weeks the instructor will give informal lectures on the customs and institutions of contemporary France, and the members of the class will be asked to reproduce, in abridged form, and in French, the substance of these talks.

The course will be conducted in French.

*The class will meet for at least one hour five times a week for six weeks at 9 A.M., in Sever 23.*



The fee for the course is \$20, except that students who take this course in connection with either of the other two courses in French may take the two courses together for \$30. (See pages 21-22.)

For further information address the Instructor, Mr. ALPHONSE BRUN, 39 Ellery Street, Cambridge, Mass.

## FRENCH LITERATURE

Subject: The origin and the development of the French Romantic Drama. Five lectures a week. The course will be conducted in French. The students will be required to read the following works, on which a weekly report will be expected.

*Sémiramis* (Voltaire); *Le Père de famille* (Diderot); *Le Philosophe sans le savoir* (Sedaine); *Eugénie* (Beaumarchais), preface and play; two melodramas (from the Warren House Library); *La préface de Cromwell* (Victor Hugo); *De l'Allemagne*, 2<sup>e</sup> partie, ch. xv-xxvi (Staël); preface of the tragedy *Wallenstein* (Benjamin-Constant); *Henri III et sa cour*, *Antony*, *La Cour de Nesles* (Alexandre Dumas père); *Chatterton* (Alfred de Vigny); *Ruy Blas*, *Lucrèce Borgia* (Victor Hugo); *Lorenzaccio*, *On ne badine pas avec l'amour*, *Le Caprice* (Alfred de Musset).

This course is accepted as a half-course for a degree in Harvard University. (See page 16.) It corresponds to French 16. The student who has been credited with French 16 may not count this course; and those who count this course and afterwards take French 16 may count the latter as a half-course only.

*The class will meet for at least one hour five times a week for six weeks at 11 A.M., in Sever 23.*

The fee for the course is \$20. (See pages 21-22.)

For further information address the Instructor, Mr. LOUIS ALLARD, 9 Hampden Hall, Cambridge, Mass.

**SCHOOL MUSIC.** (See page 109.)

**SHOPWORK.** (See page 64.)

**SURVEYING.** (See page 60.)

**VIRGIL.** (See page 49.)

## SPANISH

## S2. ADVANCED COURSE

This course is open to students who have attained a satisfactory grade in Spanish S1 above, or can otherwise satisfy the instructor as to their fitness to pursue the subject.

The fundamentals of Spanish grammar will be reviewed by means of daily lectures and themes. Practice in colloquial Spanish will be a part of each recitation. Some attention will be given to pedagogical problems involved in the teaching of Spanish in secondary schools and colleges. The object of the course is primarily linguistic, but there will be a constant effort to orient the student in criticism of literary methods and values.

Three brief classics and the most important works of one modern author will be read. Three half-hour lectures will be given on the masterpieces of the Golden Age, and six on the great novelists of the contemporary period.

The following books are required for the course: Cervantes, *Don Quijote* (D. C. Heath); Calderón, *El Mágico Prodigioso* (Henry Holt); Lope de Vega, *La Estrella de Sevilla* (Henry Holt); Armando Palacio Valdés, *Maximina*, *La Hermana San Sulpicio*, *Marta y María*, *Aguas Fuertes*.

As the majority of these books must be imported, students are requested to place their orders with the Harvard Coöperative Society or other dealers as early as possible.

This course is accepted as a half-course for a bachelor's degree in Harvard University. The student who has been credited with Spanish 5 may not count this course. (See p. 16.)

*The class will meet for an hour and a half five times a week for six weeks at 9 A.M., in Sever 19.*

The fee for the course is \$20. (See pages 21-22.)

For further information concerning this course, address the Instructor, Dr. J. G. GILL, 16 Oxford Street, Cambridge, Mass.

## S3. SPANISH CONVERSATION

This course consists almost wholly of practice in conversation. It does not presuppose more than an elementary knowledge of Spanish. A short method entitled *Spanish Simplified*, being a concise and lucid explanation of the principles of the Spanish Language, accompanied by numerous examples and exercises, and forming a complete course of instruction for the purposes of reading, business, and travel will be studied, and the students will be expected to acquaint themselves beforehand with the material to be used each day.

As a reading book G. W. Umphrey's *Spanish Prose Composition* will be used.

*The class will meet for an hour and a half five times a week for six weeks at 11 A.M., in Sever 19.*

The fee for the course is \$20; but if taken with the course in Advanced Spanish the fee for both will be \$30. (See pp. 21-22.)

For further information concerning the work of this course, address the Instructor, Dr. E. HURTADO, 35A Brattle Street, Cambridge, Mass.

---

The Lists of Students in the Summer Schools of Harvard University of 1908 (except the regular students registered in the Engineering Courses) are printed in the Harvard University Catalogue for 1908-09, pages 191-253.

This Catalogue is mailed free to teachers, and may be obtained by applying to

THE PUBLICATION OFFICE,

2 UNIVERSITY HALL,

CAMBRIDGE, MASS.

# THE SUMMER SCHOOLS

1908

## THE SUMMER SCHOOL OF THE FACULTY OF ARTS AND SCIENCES

### ANTHROPOLOGY

Bowen, Charles Gilman, <i>Student</i> ,	Boston.
Devine, Bernard Francis, <i>Student</i> ,	So. Boston.
Early, Benjamin Blakeman, <i>Student</i> ,	Rockford, Ill.
Haskell, Paul Carver, <i>Student</i> ,	Newton.
Hopkins, Nathaniel Woodworth, <i>Student</i> ,	Boston.
Leavitt, Peirce Henry, <i>Student</i> ,	Cambridge.
Moore, Sidney Howard, <i>Teacher, Public School</i> ,	New York, N.Y.
Reardon, James Michael, A.B. ( <i>Laval Univ.</i> ), <i>Professor, St. Paul Seminary</i> ,	St. Paul, Minn.
Williams, Alexander, <i>Student</i> ,	Boston.

### ASTRONOMY

d'Este, John Newport, <i>Student</i> ,	Salem.
Whiting, Florence Josephine, A.M. ( <i>Brown Univ.</i> ), <i>Science Teacher, Mrs. Dow's School, Briarcliff Manor, N. Y.</i>	Plainville.
Zillinskis, Rev. Jonas, <i>Pastor, Lithuanian Roman Catholic Church</i> ,	Boston.

### BOTANY

#### ELEMENTARY

Atkins, Robert Wrisley, <i>Student</i> ,	Belmont.
Burden, Katherine, <i>Teacher, Jefferson School</i> ,	Washington, D.C.
Butler, John Joseph, <i>Student</i> ,	Worcester.
Craig, Lewis Whittier, A.M. ( <i>Wesleyan Univ.</i> ), <i>Principal, High School</i> ,	Westport, N.Y.
Dorilda, Sister Mary, <i>Teacher, Mount St. Joseph Seminary</i> ,	Hartford, Conn.

Monk, Anna Crane (Mrs.),	Stoughton.
Outwater, Kate Sorrell (Mrs.), <i>Teacher, Jefferson School,</i>	Washington, D.C.
Ross, Thomas Stevenson, <i>Student,</i>	Watertown.
Swing, Mary Ella, <i>Teacher, High School,</i>	Bridgeton, N.J.
White, Laura Bradstreet, <i>Head of Science Department, Girls' High School, Boston,</i>	Brighton.

## FLOWERING PLANTS

Best, Sarah, A.B. ( <i>Univ. of Minnesota</i> ), <i>Teacher of Natural Science, High School,</i>	Adrian, Mich.
Bradford, Frederick Charles, S.B. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Stoneham.
Burke, Edmund Joseph, <i>Student,</i>	Worcester.
Gilmore, Florence May, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher of Mathematics and Botany, High School, Concord,</i>	W. Somerville.
Leshner, Annie Florence, S.B. ( <i>Valparaiso Coll.</i> ), M.E. ( <i>Bloomsburg S. N. S.</i> ), <i>Assistant Principal, High School,</i>	Northumberland, Pa.
Miles, Herbert James, B.A.S. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Concord.
Perry, Karl Gerhart, <i>Student,</i>	Allston.
Wheeler, Delbert Amos, S.B. ( <i>New Hampshire Coll.</i> ),	Everett.

## CHEMISTRY

## ELEMENTARY CHEMISTRY

Bailey, Winthrop Carl, <i>Teacher, Hill School,</i>	Pottstown, Pa.
Bärmig, Rudolf Gotthilf Peter, <i>Student,</i>	Dresden, Germany.
Bartlett, Lilian Whittier, <i>Dean's Assistant, Massachusetts Institute of Technology,</i>	Brookline.
Beardsley, Alonzo Hawes, <i>Student,</i>	Boston.
Bean, Ralph Carleton, A.B. ( <i>Colby Coll.</i> ), A.B. ( <i>Harvard Univ.</i> ), <i>Science Teacher, High School, Wakefield,</i>	Clinton, Me.
Bloomfield, Daniel, <i>Teacher, Civic Service House,</i>	Boston.
Burnett, George Hall, A.B. ( <i>Harvard Univ.</i> ), <i>Manufacturing Chemist, Joseph Burnett Co., Boston,</i>	Southboro.
Carr, Wentworth Caleb, <i>Student,</i>	Arlington.
Carver, Helen Grace, <i>Student,</i>	Cambridge.



Conant, Anna Louise, <i>Student</i> ,	Plainfield, N.J.
Hall, Russell Bertram, <i>Student</i> ,	Worcester.
Hatch, Elsie Emma, A.B. ( <i>Boston Univ.</i> ), <i>Teacher</i> ,	
<i>High School, Saugus</i> ,	Cliftondale.
Johnson, Kenneth Simonds, A.B. ( <i>Harvard Univ.</i> ),	
<i>Student</i> ,	Woburn.
Kearney, Thomas, B.L. ( <i>Laval Univ.</i> ), <i>Teacher</i> ,	
<i>St. Laurent College</i> ,	Montreal, Can.
Laurian, Sister Mary, <i>Teacher</i> , <i>Mount St. Joseph</i>	
<i>Seminary</i> ,	Hartford, Conn.
Law, Gordon Elliott, <i>Business Man</i> ,	Rockport.
Moffat, Barclay Wellington, <i>Student</i> ,	Orange, N.J.
Newton, Howard Augustine, A.B. ( <i>Amherst Coll.</i> ),	
<i>Teacher, Abington High School</i> ,	Winchester.
Palmer, Samuel Copeland, A.B. and A.M. ( <i>Swarth-</i>	
<i>more Coll.</i> ), <i>Graduate Student</i> ,	Cambridge.
Price, William Gibbons, <i>Principal, Gloucester</i>	
<i>Agricultural and Industrial School</i> ,	Cappahosic, Va.
Simpkins, Nathaniel Stone, Jr., <i>Student</i> ,	Washington, D.C.
Sulpicius, Brother, <i>Principal, St. Joseph's School</i> ,	Somerville.
Tressler, Samuel Martin, <i>Supervising Principal</i> ,	Washington, N.J.
Withington, Paul, <i>Student</i> ,	Honolulu, Hawaii.

## ORGANIC CHEMISTRY

Brown, Herbert Rutherford, S.B. ( <i>Univ. of Roches-</i>	
<i>ter</i> ), <i>Bacteriological Research, Massachusetts</i>	
<i>State Board of Health, Student</i> ,	Jamaica Plain.
Hill, Clarence Byron, A.B. ( <i>Boston Univ.</i> ), <i>Teacher</i>	
<i>of Physics and Chemistry, Vermont Academy,</i>	
<i>Saxton's River, Vt.</i>	Waltham.
Leary, Daniel Albert,	So. Boston.
Lipscomb, Horace Swift, M.S. ( <i>Vanderbilt Univ.</i> ),	
<i>Head of Department of Science at Fogg High</i>	
<i>School</i> ,	Nashville, Tenn.
Nash, Henry Fontaine, <i>Student</i> ,	Cambridge.
Sanders, Annie Louisa, A.B. ( <i>Tufts Coll.</i> ), <i>Teacher</i>	
<i>of Science, Lexington</i> ,	Wayland.
Sargent, Rufus Theodore, A.B. ( <i>Harvard Univ.</i> ),	
<i>Student</i> ,	Northboro.
Valentine, Brother, <i>Instructor, Mount St. Joseph's</i>	
<i>College</i> ,	Baltimore, Md.
Van Nostrand, William Theodore, <i>Student</i> ,	Boston.

## QUALITATIVE ANALYSIS

Burroughs, James Whitney, <i>Student</i> ,	Lynchburg, Va.
Butler, Fergus Almy, <i>Student</i> ,	Danvers.
Durrell, Harold Clarke, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Cambridge.
Fowler, Ernest Charles, S.B. ( <i>Michigan Agri. Coll.</i> ), <i>Instructor in Chemistry, Massachusetts Agricultural College</i> ,	Amherst.
Hébert, Albert Charles Réal, A.B. ( <i>Laval Univ.</i> ),	Quebec, Can.
Julian, Brother, <i>Teacher, St. Xavier's College</i> ,	Louisville, Ky.
Lyman, Henry, A.B. ( <i>Harvard Univ.</i> ),	Brookline.
Moore, Perry North, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	St. Louis, Mo.
Preston, Carleton Estey, PH.D. ( <i>Harvard Univ.</i> ), <i>Junior Master, High School, Charlestown</i> ,	Brighton.
Stewart, Stanley Paul, <i>Student</i> ,	Worcester.
Thomas, Alvin Edward, A.B. ( <i>Bates Coll.</i> ), <i>Teacher</i> , <i>Austin-Cate Academy</i> ,	Center Strafford, N.H.
Thomas, Brother, <i>Teacher, St. John's High School</i> ,	Worcester.
Wiley, Harry Farrington, A.B. ( <i>Tufts Coll.</i> ), <i>Instructor in Physics and Chemistry, High School, Laconia, N.H.</i>	Peabody.
Wilson, Philip Duncan, <i>Student</i> ,	Columbus, O.

## QUANTITATIVE ANALYSIS

Baker, Frank Elmer, A.B. ( <i>Allegheny Coll.</i> ), <i>Principal, High School, Greensburg, Pa.</i>	Clymer, N.Y.
Dawson, Andrew Ignatius, <i>Roman Catholic Priest</i> , <i>Congregation of the Mission</i> ,	Niagara Falls, N.Y.
Gonzalez, Maria, <i>Chemist</i> ,	Havana, Cuba.
Harris, Gorham Waller, A.B. ( <i>Harvard Univ.</i> ), <i>Teacher, High School, Medford</i> ,	Somerville.
Hunt, Ralph Leslie, A.B. ( <i>Bates Coll.</i> ), <i>Principal</i> , <i>Dawson County Free High School</i> ,	Glendive, Mont.

## PHYSICAL CHEMISTRY

Chang, Hsing Lang, <i>Student</i> ,	Shanghai, China.
Cushman, George Arved, A.M. ( <i>Harvard Univ.</i> ), <i>Teacher of Chemistry and English, Lowell Textile School</i> .	Roxbury.

## INORGANIC CHEMICAL RESEARCH

- Lansing, John Ernest, A.B. (*Harvard Univ.*), A.M.  
*(ibid.)*, Professor of Chemistry, Hobart College,  
 Woodward, Truman Stephen, A.B. (*Central Univ.*  
*of Kentucky*),

Geneva, N.Y.

Beaver Dam, Ky.

## THE CLASSICS

## GREEK FOR BEGINNERS

- Bede, Brother, S.B. (*Villanova Coll.*), Teacher, St.  
*John's Preparatory School*,  
 Goddard, Jessie, B.L. (*Univ. of Wisconsin*), Head  
*of English Department*, West Side High School,  
 Keller, Clayton Grant, Principal, High School,  
 Noble, Lydia, Student,  
 Painter, Lawrence Gilpin, B.P. (*Brown Univ.*),  
*Student*,  
 Qua, Francis Moncrief, Student,  
 Thomas, Henry Augustus, Jr., Student,

Danvers.

Portland, Ore.

Laceyville, Pa.

Malden.

Forest Hill, Md.

Lowell.

Roxbury.

## LIFE OF THE ANCIENT GREEKS

- Brown, John Whiteside, Student,  
 Burrage, Dwight Grafton, A.M. (*Amherst Coll.*), In-  
*structor in Greek and Latin*, Doane College,  
 Cammack, Huette, Student,  
 Chapin, John Revere, Student,  
 Chase, Gardner Ward, Student,  
 Chevalier, John Bayard, A.B. (*Harvard Univ.*),  
*Student*,  
 Craft, James Charles, Student,  
 Edwards, Paul, Student,  
 Flint, Helen Currier, A.M. (*Mt. Holyoke Coll.*),  
*Associate Professor of Greek*, Mt. Holyoke Col-  
*lege*,  
 Fujioka, Shin-ichiro, Student,  
 Green, Edward Brodhead, Jr., Student,  
 Groton, John Mansfield, Student,  
 Harrison, John Presley Skidmore, Student,  
 Henry, Brother, Teacher of Latin and Greek, St.  
*John's High School*,

Highland Park, Ill

Crete, Neb.

Tuxedo Park, N.Y.

Jamaica Plain.

Cambridge.

Medford.

Wilmington, N.C.

Cambridge.

So. Hadley.

Tokyo, Japan.

Buffalo, N.Y.

Philadelphia, Pa.

Cambridge.

Worcester.

Jones, Wilkins, *Student*,  
 Jowett, Robert Sanford,  
 Lerner, Alexander, *Student*,  
 McKay, Robert Gordon, *Student*,  
 Macleod, Cameron, *Student*,  
 Manning, Joseph Thruston, Jr., *Student*,  
 Miller, Charles Boardman, *Student*,  
 Niles, Nathaniel William, *Student*,  
 Northcott, Sidney Thomas Hill, *Student*,  
 Paine, William Wellington, *Student*,  
 Parker, George Alanson, *Student*,  
 Plummer, Wallace Vincent, *Student*,  
 Pope, Herbert Carruth, *Student*,  
 Richmond, Carleton Rubira, *Student*,  
 Roche, Francis George Burke, *Student*,  
 Sloane, Rush Richard, Jr., *Student*,  
 Smith, Sidney Lucius, *Student*,  
 Van Nostrand, William Theodore, *Student*,  
 Viles, Bertram Simonds, *Student*,  
 Watkins, Charles Hadley, *Student*,  
 Winslow, Edward Harrison, *Student*,

St. Louis, Mo.  
 Cambridge.  
 Ottawa, Ont.  
 Cambridge.  
 Dorchester.  
 Philadelphia, Pa.  
 Westfield.  
 Brookline.  
 Quincy.  
 Nahant.  
 So. Lancaster.  
 Winchester.  
 Dorchester.  
 Little Compton, R.I.  
 New York, N.Y.  
 Sandusky, O.  
 Hartford, Conn.  
 Boston.  
 Swampscott.  
 Milford.  
 Beverly.

#### LATIN FOR TEACHERS

Annette, Sister Mary, *Teacher*, Mount St. Joseph  
*Seminary*,  
 Baker, Bertha Beatrice, A.B. (*Fairmount Coll.*,  
*Wichita, Kan.*), *Teacher*, County High School,  
*Norton, Kan.*  
 Bingham Howard Henry Charles, A.B. (*Harvard*  
*Univ.*), *Master*, St. Paul's School, Concord,  
*N. H.*  
 Blacklock, Alexander Galpin, A.M. (*Univ. of the*  
*South*), *Business Manager*, St. Matthew's School  
*for Boys*,  
 Catherine, Sister Mary, *Teacher*, Notre Dame  
*Academy*,  
 Clough, Mineola, *Assistant*, Lincoln Grammar  
*School*, Wakefield,  
 Haxton, Euphemia, *Principal*, High School,  
 Hazen, Mabel Gibson, A.B. (*Smith Coll.*), *Teacher*  
*of Latin*, High School, Lee,  
 Hill, Dorothy Edith, S.B. (*Purdue Univ.*), *In-*  
*structor in Mathematics*, High School,

Hartford, Conn.  
 Wichita, Kan.  
 Stoneham.  
 Dallas, Tex.  
 Putnam, Conn.  
 Winthrop Centre, Me.  
 Meadville, Pa.  
 Shirley.  
 Dayton, Ind.

- Hughes, Owen, *Teacher, High School, Dyersburg, Tenn.* College Grove, Tenn.
- Jacobus, Clement Snow, A.B. (*Yale Univ.*), *Teacher of Latin, Asheville School, Asheville, N. C.* Springfield.
- Parker, Sadie Margaret, *Assistant Principal, High School,* Mercersburg, Pa.
- Russell, Marie Louise, A.B. (*Univ. of Tennessee*), *Assistant, College Office,* Cambridge.
- Simmons, Edith May, A.B. (*Wellesley Coll.*), *Teacher of Latin,* Englewood, N.J.
- Smith, Florence Marion, A.B. (*Radcliffe Coll.*), *Teacher, Wright Oral School, New York, N. Y., Student,* Lynn.
- Taylor, Russell Shepherd, A.B. (*Bowdoin Coll.*), *Student,* Skowhegan, Me.
- Whitworth, Violet May, *Teacher, Sumner School,* Salt Lake City, Utah.
- Wier, Jennie Estelle, A.B. (*Boston Univ.*), *Teacher of Latin, Chelsea High School,* Dorchester.

#### THE ROMAN POETS

- Clark, Rachel Althine, *Student,* So. Hadley.
- Dunn, Anna, A.B. (*Allegheny Coll.*), *Teacher, High School,* Meadville, Pa.
- Hatfield, William Conrey, *Teacher, Superintendent, Van Buren Township, Montgomery County, O.* Centerville, O.
- Luce, Stephen Bleecker, Jr., *Student,* Newport, R. I.
- Miller, Anna Bertha, A.B. (*Woman's Coll. of Baltimore*), *Instructor in Latin, High School,* West Chester, Pa.
- Richards, Henry Howe, A.B. (*Harvard Univ.*), *Master, Groton School,* Groton.
- Smith, Ernest Ketcham, A.B. (*Wesleyan Univ.*), A.M. (*ibid.*), *Teacher of Latin, Central High School,* Cleveland, O.
- Whipple, George Albert, A.B. (*Harvard Univ.*), *Instructor, High School,* Evanston, Ill.

#### EDUCATION

##### HISTORY OF MODERN EDUCATION

- Chien, Hu Ting, *Student,* Tientsin, China.
- Fujioka, Shin-ichiro, *Student,* Tokyo, Japan.
- Hart, Charles, *Teacher, Business High School,* Washington, D.C.
- Heath, George Byron, PH.B. (*Tufts Coll.*), *Principal, High School, Machias, Me.* Calais, Me.



Jones, Wilkins, <i>Student</i> ,	St. Louis, Mo.
Killpartrick, Myrtle Mevis, <i>Student</i> ,	Lowell.
Kolbe, Anna Clara, <i>Teacher, High School</i> ,	Cleveland, O.
Lo, Pan Hui, <i>Student</i> ,	Canton, China.
Marvin, Frank William, <i>Student</i> ,	Cambridge.
Mick, Forest Jefferson, B.L. ( <i>Ohio Northern Univ.</i> ), <i>Superintendent of Schools</i> ,	New Madison, O.
Murphy, Joseph Leroy, <i>Student</i> ,	Taunton.
Parker, George Alanson, <i>Student</i> ,	So. Lancaster.
Smith, Sidney Lucius, <i>Student</i> ,	Hartford, Conn.

#### PRINCIPLES OF EDUCATION

Barry, Agnes Elizabeth, <i>Teacher, Oliver Hazard Perry School, Boston</i> ,	So. Boston.
Brown, Gilbert Lee, M.L. ( <i>Ohio Northern Univ.</i> ), <i>Superintendent of Schools, North Baltimore, O.</i>	Crooksville, O.
Chao, Tien Lin, <i>Student</i> ,	Tientsin, China.
Chen, Tung Chung, <i>Student</i> ,	Canton, China.
Ch'in, Fên, <i>Student</i> ,	Chia-ting, China.
Chung, Shih Ming, <i>Student</i> ,	Tientsin, China.
Clark, Frank Sheldon, <i>Student</i> ,	Northfield, Vt.
Cox, Philip Wescott Lawrence, A.B. ( <i>Harvard Univ.</i> ), <i>Sub-Master, High School, Milton</i> ,	Malden.
Downey, Michael John, A.B. ( <i>Boston Coll.</i> ), <i>Assis- tant, Dearborn School, Boston</i> ,	Roxbury.
Garrison, Grace Almenia, <i>Teacher, Elementary School</i> ,	New York, N.Y.
Goldbacher, Nina Veronica, <i>Teacher, Public School, No. 37, Bronx</i> ,	New York, N.Y.
Hall, John Clifford, S.B. ( <i>Boston Univ.</i> ), <i>Teacher, Principal, High School, Cotuit</i> ,	Sudbury.
Hamlett, Robert Emmett, A.B. ( <i>Hampden-Sidney Coll.</i> ), B.LITT. ( <i>ibid.</i> ), <i>Principal, Graded School, Honaker, Va.</i>	Farmville, Va.
Ing, Tsu En, <i>Student</i> ,	Soochow, China.
Kavanagh, Rev. Leslie John, A.M. ( <i>Corpus Christi Coll.</i> ), <i>Clergyman, Superintendent of Catholic Education, Archdiocese of New Orleans</i> ,	New Orleans, La.
Kidder, Ellen Miner, <i>Special Teacher, Kelley Grammar School</i> ,	Cambridge.
Meredith, Arthur John, PH.B. ( <i>Wesleyan Univ.</i> ), <i>Teacher, Head of Commercial Department, State Normal School</i> ,	Salem.

Raub, Edgar Lovett, <i>Sub-Master, John A. Andrew School, Boston,</i>	Dorchester.
Smith, Florence Marion, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher, Wright Oral School, New York, N. Y., Student,</i>	Lynn.
Villars, Helen Mary, <i>Teacher, Primary School,</i>	Superior, Wis.
Wilson, Jessie Sanderson, <i>Teacher, LaBoca,</i>	Ancon, Canal Zone.

## SCHOOL ADMINISTRATION

Arter, William Edward, S.B. ( <i>Denison Univ.</i> ), <i>Superintendent of Schools,</i>	Hillsboro, O.
Becker, Fred Jacob, A.M. ( <i>Columbia Univ.</i> ), <i>Principal, McKinley School,</i>	Pasadena, Cal.
Begland, Samuel, <i>Principal, Public Schools,</i>	Gnadenhutten, O.
Brewer, Alba Lee, A.B. ( <i>Univ. of Nashville</i> ), <i>Superintendent, Public Schools,</i>	Tallapoosa, Ga.
Brown, Harold Irving, S.B. ( <i>Harvard Univ.</i> ), <i>Sub-Master, Thornton Academy, Saco, Me.</i>	Waverley.
Burnham, Harry Haynes, A.B. ( <i>Dartmouth Coll.</i> ), A.M. ( <i>ibid.</i> ), <i>Principal, High School,</i>	Biddeford, Me.
Cox, Philip Wescott Lawrence, A.B. ( <i>Harvard Univ.</i> ), <i>Teacher, High School, Milton,</i>	Malden.
Curtis, Kader Randolph, A.B. ( <i>Wake Forest Coll.</i> ), <i>Principal, High School,</i>	Severn, N.C.
Garrison, Grace Almenia, <i>Teacher, Elementary School,</i>	New York, N.Y.
Hake, William Howard, A.B. ( <i>Dickinson Coll.</i> ), <i>Principal, High School, Denton, Md.</i>	Gettysburg, Pa.
Hutchins, Charles Edward, <i>Principal, High School, Enfield, N. H.</i>	So. Harwich.
Kuo, Teng Han, <i>Student,</i>	Tientsin, China.
McLean, John Alexander, A.B. ( <i>Trinity Coll., N.C.</i> ), <i>Superintendent of Schools,</i>	Dunn, N.C.
Mensch, Harry Rhodes, <i>Principal, High School, Fairview, Pa.</i>	Mountain Top, Pa.
Morgan, Leland Howard, <i>Principal, Chapman School,</i>	Portland, Ore.
Newell, Caroline Seville, <i>Teacher, Public Schools,</i>	Topeka, Kan.
Partridge, Winona Graffam (Mrs.), A.B. ( <i>Oberlin Coll.</i> ), <i>Missionary in Educational Work,</i>	Sivas, Turkey.
Phelan, Walter Jordan, <i>Sub-Master, Warren School,</i>	Charlestown.
Price, Wilfred Horace, S.B. ( <i>Harvard Univ.</i> ), <i>Superintendent of Schools,</i>	Watertown.

Rike, Elmer Roy, A.B. ( <i>Ohio Wesleyan Univ.</i> ), <i>Superintendent</i> ,	Tippecanoe City, O.
Rudy, Anna Marie (Mrs.), <i>Principal, Public Schools</i> ,	Colorado Springs, Colo.
Taylor, Randall Leroy, <i>Principal, High School, Canaan, Me.</i>	Frye, Me.
Ulmer, John Grafton, <i>Superintendent of Schools, Town of Coventry, R. I.</i>	Anthony, R. I.
Wang, En-tsê, <i>Student</i> ,	Tientsin, China.

## METHODS OF TEACHING HISTORY

Bulfinch, George Greenleaf, Jr., A.B. ( <i>Boston Univ.</i> ), <i>Sub-Master, High School, Keene, N. H.</i>	Roxbury.
Cousins, Irene, <i>Teacher, High School</i> ,	Thomaston, Me.
Currier, Wilton Lincoln, A.B. ( <i>Harvard Univ.</i> ), <i>Teacher, DeMeritte School</i> ,	Boston.
Edwards, Margaret W., <i>Teacher, Grammar School</i> ,	Dayton, O.
Foley, Nellie Mathilde, <i>Teacher, Phillips School</i> ,	Boston.
Foote, Edmund Willard, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher</i> ,	Brooklyn, N.Y.
Forster, Anna Ruth, A.B. ( <i>Thiel Coll.</i> ), <i>Teacher of History, Algebra, etc., High School</i> ,	Greenville, Pa.
Greenough, Flora May, <i>Teacher, Ninth Grade, Sprague School, Brockton</i> ,	Newton Centre.
Haynes, John, A.B. ( <i>Williams Coll.</i> ), PH.D. ( <i>Johns Hopkins Univ.</i> ), <i>Junior Master, High School, Dorchester</i> ,	Boston.
McCracken, Stella May, A.B. ( <i>Univ. of Michigan</i> ), <i>Teacher, Union Hill High School, Town of Union, N. J.</i>	Cambridge.
McMahon, Ellen Agnes, <i>Assistant, Bigelow School</i> ,	So. Boston.
May, Nellie Clare, <i>Teacher and Assistant Principal, Columbia Public School</i> ,	Maynard.
Milliken, Millie Beale, <i>Vice-Principal, Public School</i> ,	Morrisville, Pa.
North, Elizabeth Smith, ( <i>West Chester State Normal School</i> ), <i>Teacher, Public School</i> ,	Lyndell, Pa.
Petit, Rev. Joseph Anselm, <i>Teacher, Marist College</i> ,	Atlanta, Ga.
Towey, James Patrick, A.B. ( <i>St. Mary's Coll.</i> ), <i>Teacher of History, St. Thomas's College</i> ,	Washington, D.C.
White, Helen, A.B. ( <i>Bates Coll.</i> ), <i>Teacher, High School, Wareham</i> ,	Wiscasset, Me.

## METHOD OF TEACHING MATHEMATICS

Batt, Almira Laura, B.S. ( <i>Wellesley Coll.</i> ), <i>English High School, Somerville,</i>	Concord Junction.
Mulcahy, Annie Mary, <i>Head of Mathematical Department, High School,</i>	So. Boston.
O'Leary, Wesley Alvah, S.B. ( <i>Dartmouth Coll.</i> ), <i>Teacher, High School, New Bedford,</i>	Southboro.
Rickey, Chester Steele, A.B. ( <i>Boston Univ.</i> ), <i>Teacher, Brattleboro Academy,</i>	Stoneham.
Strout, Letty Amanda, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher of Mathematics, Allen School for Girls, W. Newton,</i>	Waltham.
Taylor, Abram Russel, <i>Instructor in Mathematics, High School,</i>	Cambridge.
Trumbull, Samuel Beedy, PH.B. ( <i>Brown Univ.</i> ), <i>Teacher, High School, Summit, N.J.</i>	Lawrence.
Williams, Sarah Holbrook, A.B. ( <i>Smith Coll.</i> ), A.M. ( <i>Columbia Univ.</i> ), <i>Assistant, Myles Standish School, Roxbury,</i>	Brookline.
Wright, Henry Merrill, A.B. ( <i>Bowdoin Coll.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher, English High School, Boston,</i>	Quincy.

## ENGINEERING

(In addition to the following members of the Summer School registered in Engineering there were one hundred and twenty students in Surveying, and forty-one in Shopwork, who were registered in other Schools of Harvard University.)

## SURVEYING

Brandreth, John Breckenridge, <i>Student,</i>	Bellport, L.I., N.Y.
Bryant, Henry Stone, <i>Student,</i>	Brookline.
Butler, John Grimes, <i>Student,</i>	New York, N.Y.
Clemans, Henry Goldsmith, <i>Student,</i>	St. Paul, Minn.
Congdon, Benjamin Osgood, <i>Watchmaker,</i>	Waltham.
Davis, Charles Stevenson, Jr.	Plymouth.
Ellis, John Lawrence, A.B. ( <i>Boston Univ.</i> ), <i>Student,</i>	Maynard.
Estabrook, Joseph Benedict, <i>Student,</i>	Minneapolis, Minn.
Hall, Henry Bass, <i>Lumber Business,</i>	Newton Centre.
Hall, Horace Whitney, <i>Lumber Business,</i>	No. Pembroke.
Hall, Stanley Breed, A.B. ( <i>Harvard Univ.</i> ), <i>Lumber Business,</i>	No. Pembroke.
Hutchinson, Robert Hare, <i>Student,</i>	Philadelphia, Pa.

Kerr, Alexander Thomas Warwick, *Student*,  
 Read, Charles Albert, Jr., *Student*,  
 Robinson, Francis Asbury, A.B. (*Dartmouth Coll.*),  
*Student*,  
 Robinson, Stewart Douglas, *Student*,  
 Strickler, Guy Forney, *Student*,  
 Sutherland, Clarence Hale, A.B. (*Harvard Univ.*),  
*Student*,  
 Wilder, Paul, *Student*,

Portland, Ore.  
 Manchester.  
 Brookline.  
 New York, N.Y.  
 Lebanon, Pa.  
 Brunswick, Me.  
 Gardner.

## RAILROAD ENGINEERING

Brandreth, John Breckenridge, *Student*,  
 Bryant, Henry Stone, *Student*,  
 Butler, John Grimes, *Student*,  
 Clemans, Henry Goldsmith, *Student*,  
 Davis, Charles Stevenson, Jr.  
 Ellis, John Lawrence, A.B. (*Boston Univ.*), *Student*,  
 Estabrook, Joseph Benedict, *Student*,  
 Frasier, Tranquilino, S.B. (*Instituto Sta. Clara*),  
 A.B. (*ibid.*), *Engineer*,  
 Hanna, Elias Lammon, *Student*,  
 Hutchinson, Robert Hare, *Student*,  
 Kerr, Alexander Thomas Warwick, *Student*,  
 Post, Charles Addison, *Student*,  
 Read, Charles Albert, Jr., *Student*,  
 Robinson, Stewart Douglas, *Student*,  
 Strickler, Guy Forney, *Student*.  
 Wilder, Paul, *Student*,

Bellport, L.I., N.Y.  
 Brookline.  
 New York, N.Y.  
 St. Paul, Minn.  
 Plymouth.  
 Maynard.  
 Minneapolis, Minn.  
 Havana, Cuba.  
 Boston.  
 Philadelphia, Pa.  
 Portland, Ore.  
 Clinton, Conn.  
 Winchester.  
 New York, N.Y.  
 Lebanon, Pa.  
 Gardner.

## CHIPPING, FILING, AND FITTING

Breese, James Lawrence, Jr., *Student*,  
 Brown, Robert Clois, *Student*,  
 Eliot, Samuel, *Student*,  
 French, Arthur Winkley, *Instructor in Manual*  
*Training*,  
 O'Brien, Edward, *Student*,  
 Virchow, Gustav F., *Student*,

Princeton, N.J.  
 Cambridge.  
 Manchester.  
 Manchester, N.H.  
 Norwood.  
 Waverley.

## BLACKSMITHING

Breese, James Lawrence, Jr., *Student*,  
 Christmas, William Howard, *Teacher, Manual*  
*Training Department*,  
 Eliot, Samuel, *Student*,  
 French, Arthur Winkley, *Instructor in Manual*  
*Training*,

Princeton, N.J.  
 San Antonio, Tex.  
 Manchester.  
 Manchester, N.H.



## PATTERN MAKING AND FOUNDRY PRACTICE

Breese, James Lawrence, Jr., <i>Student</i> ,	Princeton, N.J.
Dougan, James Edward, <i>Director of Manual Training, Piqua, O.</i>	Cambridge.
Eliot, Samuel, <i>Student</i> ,	Manchester.
French, Arthur Winkley, <i>Instructor in Manual Training</i> ,	Manchester, N.H.
Virchow, Gustav F., <i>Student</i> ,	Waverley.

## MACHINE SHOP PRACTICE

Breese, James Lawrence, Jr., <i>Student</i> ,	Princeton, N.J.
Eliot, Samuel, <i>Student</i> ,	Manchester.
French, Arthur Winkley, <i>Instructor in Manual Training</i> ,	Manchester, N.H.
O'Brien, Edward, <i>Student</i> ,	Norwood.
Swan, Godfrey, <i>Engineer, Burbank Hospital</i> ,	Fitchburg.
Virchow, Gustav F., <i>Student</i> ,	Waverley.

## ENGLISH

## ENGLISH COMPOSITION A

Admirabilis, Sister Mary, <i>Teacher, Mount St. Joseph Seminary</i> ,	Hartford, Conn.
Bien, Zue Sun, <i>Student</i> ,	Shanghai, China.
Cavanaugh, Elizabeth, <i>Teacher</i> ,	Easton.
Chen, Shih Ti, <i>Student</i> ,	Cambridge.
Conant, Lillian Rosalia, <i>Teacher, Noah Webster School</i> ,	Hartford, Conn.
Davis, Diana Kent, <i>Principal, State Street School</i> ,	Atlanta, Ga.
Dudley, James Benson, <i>President, State Agricultural and Mechanical College</i> ,	Greensboro, N.C.
Farwell, Edgar Winthrop, <i>Principal, Whitman School</i> ,	Brockton.
Foster, Dwight Norman, <i>Student</i> ,	Dorchester.
Fuller, Edith Davenport, <i>Librarian, Library of Episcopal Theological School</i> ,	Cambridge.
Ginsburg, Edward E., <i>Student</i> ,	Boston.
Golden, Harry Bernard, <i>Student</i> ,	Hough's Neck.
Greene, John Benjamin, s.B. ( <i>Campbell Coll.</i> ), <i>Teacher</i> ,	Port Gibson, Miss.
Hart, Harriet de, A.B. ( <i>N.Y. City Normal Coll.</i> ), <i>Teacher</i> ,	New York, N.Y.

Hartwell, Marion Wheeler, <i>Assistant Instructor, Athletics and Gymnastics, University of Missouri, Columbia, Mo.</i>	Somerville Highlands.
Irving, Helen Grant, <i>Critic Teacher, State Normal School, Oneonta, N. Y.</i>	W. Mystic, Conn.
Jimeno, Paula,	Querétaro, Mexico.
Lockhart, Selina Rebecca, <i>Trained Nurse,</i>	Cambridge.
McKallip, Henry Kipp, <i>Business Man,</i>	Pittsburg, Pa.
Omey, Elizabeth Emma, <i>Teacher, Middle Street Grammar School,</i>	New Bedford.
Ouvrard, John Marie, S.T.L. ( <i>Catholic Univ., Washington, D. C.</i> ), <i>Student,</i>	Brookland, D.C.
Pinkham, Josephine, <i>Teacher,</i>	New York, N.Y.
Place, Lillian Frances, <i>Teacher,</i>	W. Roxbury.
Roach, Aurelia, <i>Principal, Crew Street Grammar School,</i>	Atlanta, Ga.
Roche, Sarah Lucy, <i>Teacher, Public School,</i>	Baltimore, Md.
Roddey, Annie, <i>Principal, Pryor Street Grammar School,</i>	Atlanta, Ga.
Shields, Ella, A.M. ( <i>Wooster Univ.</i> ), <i>Teacher of English, Central High School,</i>	Duluth, Minn.
Smith, Blanche Victoria, <i>Teacher, Phillips Brooks School, Dorchester,</i>	Roxbury.
Springer, Jessie Florence, <i>Clerk, Dept. of Agriculture,</i>	Washington, D.C.
Walt, Eva Blanch, M.E. ( <i>West Chester Normal School</i> ), <i>Teacher, Royersford Public School,</i>	Parkerford, Pa.
Weston, Arthur James, A.M. ( <i>Yale Univ.</i> ), <i>Instructor in English, Stevens Institute of Technology, Hoboken, N. J.</i>	Scranton, Pa.
Wier, Isabel May, <i>Master's Assistant, Bennett School, Boston,</i>	Dorchester.
Wilz, Stella Regina, <i>Principal, Commercial Department, High School,</i>	Dunmore, Pa.

#### ENGLISH COMPOSITION B

Annette, Sister Mary, <i>Teacher, Mount St. Joseph Seminary,</i>	Hartford, Conn.
Beam, Helen Arnold, <i>Teacher, Keystone State Normal School,</i>	Kutztown, Pa.
Benshimol, Ella Frances,	Cambridge.
Cadwallader, Laura Hanes, <i>Teacher, Commercial High School for Girls,</i>	Philadelphia, Pa.

Campbell, Annie Cannon, A.B. ( <i>Wilson Coll.</i> ), <i>Teacher of English, High School, Altoona, Pa.</i>	[nace, Pa. Pennsylvania Fur-
Chin, Tai, <i>Student</i> ,	Tientsin, China.
Cleland, Jane Evangeline, <i>Teacher, Public School</i> ,	Pembroke, N.S.
Douglass, Ida Whittington (Mrs.),	Tucson, Ariz.
Dowd, John Edward, A.B. ( <i>Holy Cross Coll.</i> ), <i>Teacher, St. Edward's College, Austin, Tex.</i>	Worcester.
Fenton, Fanny Josephine, <i>Teacher of French, High School for Girls</i> ,	Philadelphia, Pa.
Grover, Olive Rockwell, A.B. ( <i>Boston Univ.</i> ), <i>Assis-</i> <i>tant Principal</i> ,	Nahant.
Gunnels, Sadie G. (Mrs.), A.B. ( <i>Southern Female Coll.</i> ), <i>Student</i> ,	Montgomery, Ala.
Hatter, Anna Virginia, <i>Teacher, Public Schools</i> ,	Baltimore, Md.
Hewins, Anna Fiske, <i>Teacher of English and His-</i> <i>tory, Curtis-Peabody School, Boston</i> ,	W. Roxbury.
Holtzclaw, William Henry, <i>Principal, Utica Normal and Industrial Institute</i> ,	Utica, Miss.
Hunter, Kenneth Williams, <i>Student</i> ,	Albany, N.Y.
MacDonald, John Hugh, A.B. ( <i>St. Francis Xavier's Coll.</i> ), <i>Teacher, St. Francis Xavier's High School</i> ,	Antigonish, N.S.
McGuffey, Margaret Drake, <i>Librarian, Secretary, Library of Congress</i> ,	Washington, D.C.
Miller, Grace Moncrieff, <i>Teacher of French, High School</i> ,	Brookline.
Parker, Julia Edna, <i>Teacher, Public School, No. 3</i> ,	Brooklyn, N.Y.
Reed, Robert Ray, A.B. ( <i>Univ. of Minnesota</i> ), <i>Superintendent City Schools, Stephen, Minn.</i>	River Falls, Wis.
Reynolds, Alice Southworth, <i>Teacher, Cony High School</i> ,	Augusta, Mo.
Rice, Carrie Eliza, <i>Teacher of English, High School</i> ,	Niagara Falls, N.Y.
Robbins, Mary La Fayette, A.B. ( <i>Greensboro Female Coll.</i> ), <i>Teacher of English, Christ School, Arden, N.C.</i>	Statenville, N.C.
Thomas, Helen Louise, A.B. ( <i>Boston Univ.</i> ), A.M. ( <i>Columbia Univ.</i> ), <i>Teacher, English Depart-</i> <i>ment, Girls' Latin School, Baltimore, Md.</i>	Collingswood, N.J.
Whitis, Mary, <i>Principal, Whitis School</i> ,	Austin, Tex.

#### ENGLISH COMPOSITION C

Alexander, Florence Margaret, <i>Art Student</i> ,	Newtonville.
Bayley, Anna Florence, <i>Teacher, Lewis Grammar School, Boston</i> .	Roxbury.

Bossert, Emma Keturah, M.E. ( <i>West Chester State Normal School</i> ), Teacher, <i>High School</i> ,	Phoenixville, Pa.
Edwards, William James, Principal, <i>Snow Hill Normal and Industrial Institute</i> ,	Snow Hill, Ala.
Eugenia, Sister, Teacher, <i>St. Joseph's Academy</i> ,	St. Paul, Minn.
Faulds, Lena Elizabeth, Teacher of <i>Latin and Greek, High School, Wilkes-Barre, Pa.</i>	Kingston, Pa.
Gibbs, Laura Russell, B.L.S. ( <i>Univ. of Illinois</i> ), Assistant to Librarian, <i>Radcliffe College</i> ,	Wareham.
Glancy, Mabel Francis, Associate Editor, " <i>Sportsmen's Review</i> ," Cincinnati, O.	Batavia, O.
Gring, Ambrose Daniel, Jr., Student,	Boston.
Gruss, Pauline Froelich, Teacher, <i>Public Schools</i> ,	Baltimore, Md.
Hagarty, Laura Dunbar, Teacher of <i>English, Teachers' Training School</i> ,	Buffalo, N.Y.
Heffernan, Elizabeth Purse, Kindergarten Teacher, <i>Pittsburg, Pa.</i>	Oil City, Pa.
Holton, Susan May, B.L. ( <i>Smith Coll.</i> ),	Philadelphia, Pa.
Morse, Minnie Elizabeth, Teacher, <i>Nutley, N. J.</i>	Burlington, N.J.
Morse, Nathan Chase, Student,	W. Roxbury.
Moseley, Ella Lowery (Mrs.), Writer,	Millbrook, Ala.
Parsons, Chauncey Lyman, A.B. ( <i>Amherst Coll.</i> ), Teacher of <i>English, High School, Houston, Tex.</i>	Northampton.
Shirley, Minerva Blodgett (Mrs.), PH.B. ( <i>Boston Univ.</i> ), Teacher, <i>Hitchcock Academy, Brimfield</i> ,	Andover, N.H.
Ulery, Katharine Marchand, A.B. ( <i>Kee Mar Coll., Md.</i> ), Teacher, <i>High School</i> ,	Greensburg, Pa.
White, Mary Josephine, Teacher of <i>English, National Park Seminary</i> ,	Forest Glen, Md.
Wilhelm, Donald,	Defiance, O.

#### ENGLISH ADMISSION REQUIREMENTS

Alford, Mary Jane, A.B. ( <i>Woman's Coll., Baltimore, Md.</i> ), Vice-Principal, <i>High School, Towson, Md.</i>	Washington, D.C.
Allen, Florence Cragin, A.B. ( <i>Middlebury Coll.</i> ), Teacher, <i>High School</i> ,	Brattleboro, Vt.
Aloysius, Sister Mary, Teacher, <i>Mount St. Joseph Seminary</i> ,	Hartford, Conn.
Bass, Ethel Vinton, A.B. ( <i>Woman's Coll., Baltimore, Md.</i> ), Theme-Critic, <i>Eastern High School, Baltimore, Md.</i> , Teacher of <i>English, Beaumont School</i> ,	Catonsville, Md.

- Behrends, Arthur Wemyss, LIC. LITT. (*Bern, Switzerland*), *Senior Master, St. Alban's School*,  
Knoxville, Ill.
- Bogues, Frank Ellis, A.B. (*Amherst Coll.*), *Head of English Department, Hackley School*,  
Tarrytown, N.Y.
- Borland, Lois Bertha, A.B. (*Kansas Univ.*), *Teacher of English, University Preparatory School, Tonkarwa, Okla.*  
Scranton, Kan.
- Brown, Grace Enos, A.B. (*Univ. of Michigan*), *Teacher of English, High School*,  
Aurora, Ill.
- Buell, Frances Margarita, *Teacher of English, Seminary of the Academy of the New Church*,  
Bryn Athyn, Pa.
- Burgess, Augusta Blanche, *Teacher, Elementary Schools*,  
Baltimore, Md.
- Cecilia, Sister Mary, *Teacher, Mount St. Joseph Seminary*,  
Hartford, Conn.
- Cerda, Arturo González, *Student*,  
Cambridge.
- Clarson, James Willis, Jr., *Principal, and Teacher of English, Preparatory Centre, No. 52*,  
Baltimore, Md.
- Cranston, Georgia, A.B. (*Dickinson Coll.*), *Teacher, High School, Trenton*,  
Harrisburg, Pa.
- Duclos, Joseph Louis, S.T.B. (*Catholic Univ., Washington, D. C.*), *Teacher, All Hallows College*,  
Salt Lake City, Utah.
- Elliott, Marion Porter, *Teacher, Grammar School, Danvers*,  
W. Medford.
- Flower, Daisy, A.B. (*Wellesley Coll.*), *Formerly Head of English Department, High School*,  
Evansville, Ind.
- Hall, Alice, *Teacher of English, Steele High School*,  
Dayton, O.
- Harrison, Esther Anna, A.B. (*Woman's Coll., Baltimore, Md.*), *Teacher, Western High School*,  
Baltimore, Md.
- Haskell, Helen Hall,  
Ipswich.
- Hewitt, Florence Hamilton, A.B. (*Wellesley Coll.*), *Teacher of English and History, High School, Kennebunk, Me.*  
Portsmouth, N.H.
- Johnson, Beulah Proctor, A.B. (*Wellesley Coll.*), *Teacher*,  
Natick.
- Larson, Emma Ellen, A.B. (*Univ. of Michigan*), *Principal, and Teacher of English, High School, Dollar Bay, Mich.*  
Calumet, Mich.
- Lester, Anna Wiley, *Teacher, Grade VI, Elementary School*,  
Baltimore, Md.
- McManus, Helen Mary, A.B. (*Radcliffe Coll.*),  
Roxbury.



- Matthews, Laura Adelaide, A.B. (*Smith Coll.*),  
*Teacher of English and Mathematics, High School,* Portsmouth, N.H.
- Miller, Noma Goldsborough, A.B. (*Woman's Coll., Baltimore, Md.*), *Teacher of English, Eastern High School,* Baltimore, Md.
- Montague, Helen, *Tutor in English,* Cambridge.
- Mosby, Anna Blackwell (Mrs.), *Teacher of English, Edward McGehee College, Woodville, Miss.* Somerville, Tenn.
- Murrell, Sarah, *Teacher, Public Schools,* Somerville, Tenn.
- Osing, Leila Richardson, *Teacher, Elementary School,* Baltimore, Md.
- Perin, Melva, A.B. (*St. Lawrence Univ.*), *Teacher,* Lexington.
- Preston, Clara Frances, A.B. (*Wellesley Coll.*), *Assistant Principal, High School,* Nashua, N.H.
- Queeney, Sara, *Teacher, Rowley,* Everett.
- Rowell, Virginia Fay, *Teacher of Elocution, High School, Revere,* Dorchester.
- Scott, Lillian Agnes, PH.B. (*Univ. of Vermont*), *Teacher,* Burlington, Vt.
- Secor, Mabel Roberts, A.B. (*Michigan Univ.*), *Teacher of English, High School, Washington, N. J.* Arlington, N.J.
- Shannon, Thomas Barr, *Teacher, High School, California, Pa.* Turbotville, Pa.
- Smith, Charles Lester, A.B. (*Harvard Univ.*), *Teacher of English, Newman School, Hackensack, N. J.* Portland, Me.
- Spargo, Caroline, *Teacher, Washington School,* Wheeling, W. Va.
- Spence, Anne Thornton, *Student,* Atlanta, Ga.
- Taylor, Frances Madison, L.I. (*Peabody Normal Coll.*), *Teacher of English, High School, Del Rio, Texas,* Taylor's Chapel, Tenn.
- Tucker, Frances, A.B. (*Boston Univ.*), *Teacher, High School, Quincy,* Arlington.
- Wilder, Bertha Frances, B.L. (*Smith Coll.*), *Teacher of English, High School, Port Chester, N. Y.* Medway.

#### OUTLINES OF ENGLISH LITERATURE

- Alexander, Constance Grosvenor, A.B. (*Radcliffe Coll.*), Cambridge.
- Boyd, Adelaide, B.L. (*Converse Coll.*), Spartanburg, S.C.

Ellis, Harriett Stratton, A.B. ( <i>Woman's Coll., Baltimore, Md.</i> ),	Washington, D.C.
Flagg, Martha Evelyn, <i>Student</i> ,	Cambridge.
Gardner, Mary Alice, <i>Teacher, Public Schools, Ashbourne, Pa.</i>	York Springs, Pa.
Kane, Mary Agnes, <i>Teacher</i> ,	Fitchburg.
Nelson, Mary Grace, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher, High School, Medford</i> ,	Dorchester.
Peters, Melissa Arminda, <i>Teacher</i> ,	Cleveland, O.
Richardson, Rosa Estabrook, <i>Teacher, Glover Grammar School, Milton</i> ,	Malden.
Robinson, Ethel Tremaine, PH.B. ( <i>Brown Univ.</i> ), <i>Instructor in English and Methods, Howard University, Washington, D.C.</i>	Providence, R.I.
Shute, Henry Martin, A.M. ( <i>Tufts Coll.</i> ), <i>Instructor in German, Phillips Exeter Academy</i> ,	Exeter, N.H.

## ANGLO-SAXON

Benson, Edwin Francis, A.B. ( <i>Boston Coll.</i> ), <i>Junior Master, English High School, Boston</i> ,	Roslindale.
Eiermann, William Mark, <i>Teacher, Assumption Academy</i> ,	Utica, N.Y.
Foerster, Norman, <i>Student</i> ,	Boston.
Root, Royal Pulsifer, <i>Student</i> ,	New York, N.Y.

## EIGHTEENTH CENTURY LITERATURE

Anderson, Marion Bradford, <i>Teacher, Public School</i> ,	Brownsville, Tenn.
Crabtree, Lizzie Florence,	New Britain, Conn.
Gibbs, Laura Russell, B.L.S. ( <i>Univ. of Illinois</i> ), <i>Assistant Librarian, Radcliffe College, Cambridge</i> ,	Wareham.
Holton, Susan May, B.L. ( <i>Smith Coll.</i> ),	Philadelphia, Pa.
Hunter, Kenneth Williams, <i>Student</i> ,	Albany, N.Y.
Parsons, Chauncey Lyman, A.B. ( <i>Amherst Coll.</i> ), <i>Teacher of English, High School, Houston, Tex.</i>	Northampton.
Perkins, Bertha Alice, <i>Kindergarten Teacher, Miss Webster's School</i> ,	Cambridge.
Spence, Anne Thornton, <i>Teacher of English, Bryan Normal Institute, Pembroke, Ga.</i>	Atlanta, Ga.

## NINETEENTH CENTURY LITERATURE

- Boswell, Maitland Crease, B.S. (*Toronto Univ.*),  
A.M. (*Harvard Univ.*), PH.D. (*Toronto Univ.*),  
*Lecturer in Organic Chemistry, University of*  
*Toronto,* Toronto, Can.
- Clarke, Ida Janette, *Principal, Primary School,* Lowell.
- Farmer, James William, A.B. (*Emory Coll.*),  
*Supervising Principal, Louisville Academy,* Louisville, Ga.
- Fisher, Mary Ellen (Mrs.), Cambridge.
- Golay, Juliette, A.B. (*Vassar Coll.*), A.M. (*Colum-*  
*bia Univ.*), *Teacher, Belmont College, Nash-*  
*ville, Tenn.* Machiasport, Me.
- Goodhue, Lawrence Cushing, *Student,* Andover.
- Harlow, May Lincoln, PH.B. (*Oberlin Coll.*),  
*Teacher,* Sunapee, N.H.
- Hayward, Grace Althea, A.M. (*Univ. of Kansas*),  
*Instructor in English Composition, University*  
*of Kansas,* Lawrence, Kan.
- Henry, Viola Pearle, *Student,* Westerville, O.
- Kennedy, Mary Rosella, *Assistant, Grammar*  
*School, Boston,* Somerville.
- Keys, Ella Reed, *Grade Teacher, Public Schools,* Philadelphia, Pa.
- Mitchell, Beulah, *Student,* Lubec, Me.
- Parker, Julia Edna, *Teacher, Public School, No. 3,* Brooklyn, N.Y.
- Poor, Mary Sargent (Mrs.), Cambridge.
- Porter, Eva Augusta, B.L. (*Smith Coll.*), *Head of*  
*the English Department, St. Gabriel's School,*  
*Peekskill, N. Y.* Williamsburg.
- Richards, Gertrude Moore (Mrs.), Brookline.
- Schilling, Johanna Josephine, Hoboken, N. J.
- Snyder, Margaret Sterling, A.B. (*Radcliffe Coll.*), Burlington, N. J.
- Sweeney, John Martin, Jr., *Student,* Naugatuck, Conn.
- Thompson, Leda Jane, *Teacher of Literature, Mrs.*  
*Dow's School, Briarcliff Manor, N. Y.* No. Attleboro.
- Traynor, Grace Anne, *Teacher,* Biddeford, Me.
- White, Mary Josephine, *Teacher, National Park*  
*Seminary,* Forest Glen, Md.
- Whittier, Isabella Lincoln, Milton.

## ENGLISH ROMANTIC POETS

- Grimké, Angelina Weld, *Teacher of English, M*  
*Street High School,* Washington, D.C.
- Reed, Warren Whittemore, A.B. (*Harvard Univ.*),  
*Instructor in English, Texas A. and M. College,* Boston.

## FINE ARTS

## HISTORY OF EARLY EUROPEAN ARCHITECTURE

Early, Benjamin Blakeman, <i>Student</i> ,	Rockford, Ill.
Edwards, Paul, <i>Student</i> ,	Cambridge.
Jensen, William Barton, LL.B. ( <i>Boston Y. M. C. A. Evening Law School</i> ), <i>Lawyer</i> ,	Boston.
Neighbours, Sam, <i>Student</i> ,	Los Angeles, Cal.
Shoup, Grace, <i>Department Teacher of Art and English, Public Schools</i> ,	Indianapolis, Ind.
Van Brunt, Courtlandt, <i>Student</i> ,	Dedham.

## HISTORY OF LATER EUROPEAN ARCHITECTURE

Derby, Margaret Leonard, A.B. ( <i>Radcliffe Coll.</i> ),	Columbus, O.
Kendrick, Edith May (Mrs.),	Boston.
Killpartrick, Myrtle Mevis, <i>Student</i> ,	Lowell.
Pond, Gardner Dwinell, <i>Student</i> ,	Winchester.

## ARCHITECTURAL DESIGN

Boyd, John Taylor, Jr., A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Brookline.
Cordingley, William Wade, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Boston.
Little, Harry Britton, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Brookline.
Mowll, Philip Waldstein, <i>Student</i> ,	Arlington.
Robertson, Rhodes, <i>Student</i> ,	Somerville.
Ross, Thomas Stevenson, <i>Student</i> ,	Watertown.
Shurtleff, Harold Robert, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Concord, N. H.

## DESIGN IN THE ARTS

Ayer, Mary Lillian, <i>Student</i> ,	Cambridge.
Bailey, Cora, <i>Designer and Maker of Stained Glass</i> ,	Boston.
Barnes, Sarah, <i>Student</i> ,	Brookline.
Benoit, Selena Frances, <i>Teacher, Grammar School</i> ,	Springfield.
Camber, Frances Julia, <i>Teacher, Grammar School, Lonsdale, R. I.</i>	Worcester.
Clark, Helen Augusta,	Boston.
Cohen, James, <i>Supervisor of Drawing, Chicopee</i> ,	Chelsea.
Collins, Hazel Gaylord, <i>Student</i> ,	Brookline.
Day, Mary Amelia, <i>Teacher, Atlantic Christian College</i> ,	Wilson, N.C.

Dowd, Margaret Mary, <i>Student</i> ,	Roxbury.
Ferson, Aimée Clara, <i>Director of Manual Training</i> ,	Melrose.
Goldman, Julia, <i>Teacher of Drawing and the Manual Arts, High School</i> ,	Beverly.
Ingham, Mary Hall, A.B. ( <i>Bryn Mawr Coll.</i> ), <i>Private Tutor</i> ,	Philadelphia, Pa.
Kallen, Deborah, <i>Student</i> ,	Boston.
Kelly, Bessie A., <i>Supervisor of Drawing, Fremont and Clyde, Ohio</i> ,	Sandusky, O.
Maynard, Harriet Hatton,	Newburyport.
McDonald, Anna Louise, <i>Teacher in Private Art School</i> ,	San Diego, Cal.
Neill, Francis Isabel, <i>Teacher of Art, Arundell School</i> ,	Baltimore, Md.
Pattison, Alice Maynard Gould (Mrs.),	St. Louis, Mo.
Pettee, Florence Mae, <i>Instructor in Art, High School</i> ,	Brockton.
Potter, Henry Staples (Mrs.), <i>Student</i> ,	Boston.
Potter, Howard, <i>Student</i> ,	Boston.
Riedell, Clifford Henry, <i>Teacher, Swain Free School of Design, New Bedford</i> ,	Marion.
Robinson, Edward Kilburn, S.B. ( <i>Dartmouth Coll.</i> ), <i>Business</i> ,	Boston.
Schaefer, Mary Louise, <i>Teacher</i> ,	Superior, Wis.
Simons, Henrietta, <i>Teacher of Drawing, Memminger Normal School</i> ,	Charleston, S.C.
Sturgis, George Hardwicke, <i>Student</i> ,	New Bedford.
Wheeler, Laura, <i>Student</i> ,	Hartford, Conn.
Wiley, Hedwig,	Philadelphia, Pa.

## DRAWING AND PAINTING IN REPRESENTATION

Bailey, Jennie Ethelind, <i>Teacher of Drawing, Lawrence Grammar School, Boston</i> ,	W. Newton.
Cleaves, Helen E., <i>Assistant to Director of Drawing, Boston</i> ,	Medford.
Comins, Eben Farrington,	Boston.
Hazelton, Margarita Thompson,	Wellesley Hills.
Hood, Finlay, <i>Teacher, Collegiate Institute</i> ,	Ottawa, Can.
King, Edith Lawrence, <i>Teacher, Miss Webster's School, Cambridge</i> ,	Belmont.
McConnell, Arthur Wellesley, B.A.S.C. ( <i>Univ. of Toronto</i> ), <i>Architect, Lecturer on Architecture, University of Toronto</i> ,	Toronto, Can.



Shaw, William Henderson, <i>Student</i> ,	New Bedford.
Sowle, Lilian Bly, <i>Student</i> ,	New Bedford.
Swett, Frances Lucinda, <i>Supervisor of Drawing</i> , <i>Walpole, Medfield, Norfolk</i> ,	Gloucester.
Weir, Irene, B.F.A. ( <i>Yale Univ.</i> ), <i>Director of Art</i> , <i>Brookline</i> ,	Cambridge.
Weyssse, Arthur Wisswald, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>ibid.</i> ), PH.D. ( <i>ibid.</i> ), M.D. ( <i>Univ. of</i> <i>Basle</i> ), <i>Physician and Professor of Biology</i> , <i>Boston University</i> ,	Boston.

#### HISTORY OF ANCIENT ART

Bacon, George Bailey, <i>Student</i> ,	Cambridge.
Brown, John Whiteside, <i>Student</i> ,	Highland Park, Ill.
Cammack, Huette, <i>Student</i> ,	Tuxedo Park, N.Y.
Chase, Gardner Ward, <i>Student</i> ,	Cambridge.
Clement, James Keith, <i>Student</i> ,	Wayland.
Davis, Nathan Smith, Jr., <i>Student</i> ,	Chicago, Ill.
Gillen, James Blaine, <i>Student</i> ,	Andover.
Green, Edward Brodhead, Jr., <i>Student</i> ,	Buffalo, N.Y.
Jowett, Robert Sanford, <i>Student</i> ,	Cambridge.
McKay, Robert Gordon, <i>Student</i> ,	Cambridge.
Macleod, Cameron, <i>Student</i> ,	Dorchester.
Manning, Joseph Thruston, Jr., <i>Student</i> ,	Philadelphia, Pa.
Miller, Charles Boardman, <i>Student</i> ,	Westfield.
Munroe, Robert Gookin, <i>Student</i> ,	Lexington.
Plummer, Wallace Vincent, <i>Student</i> ,	Winchester.
Pope, Herbert Carruth, <i>Student</i> ,	Dorchester.
Rand, Horace Shrefey, Jr., <i>Student</i> ,	Burlington, Ia.
Scudder, Theodore Townsend, <i>Student</i> ,	Cambridge.
Sloane, Rush Richard, Jr., <i>Student</i> ,	Sandusky, O.
Winslow, Edward Harrison, <i>Student</i> ,	Boston.
Young, John Franklin, Jr., <i>Student</i> ,	Newburyport.

#### GEOLOGY AND GEOGRAPHY

##### GENERAL FIELD GEOLOGY

Bicknell, John Warren, <i>Student</i> ,	Malden.
Fuller, Francis Sanborn, <i>Student</i> ,	Newton.
Holmes, Edwin Pratt, <i>Student</i> ,	Brookline.
Merriam, Bernard Adolphus, <i>Student</i> ,	So. Framingham.
Roorbach, George Byron, A.B. ( <i>Colgate Univ.</i> ), <i>Teacher of Science, The Peddie Institute</i> , <i>Hightstown, N. J.</i>	Fort Plain, N.Y.
Smith, Sedgwick, <i>Student</i> ,	Skaneateles, N.Y.

## PHYSIOGRAPHIC FIELD INVESTIGATION

*Section A.*—In Northern Italy and Southern Switzerland*Section B.*—In Central France and Switzerland

- |   |               |
|---|---------------|
| Buchanan, Julian Eugene, s.B. ( <i>Univ. of Michigan</i> ),<br>A.M. ( <i>Harvard Univ.</i> ), <i>Instructor in Physical<br/>Science, State Normal School,</i> | Cheney, Wash. |
| Cushing, Sumner Webster, s.B. ( <i>Harvard Univ.</i> ),<br><i>Instructor in Geography and Mineralogy,<br/>Normal School, Salem,</i>                           | Brookton.     |
| Reed, William Gardner, Jr., <i>Student,</i>   | Cambridge.    |
| Schmitgen, Edward William, <i>Student,</i>  | Lincoln, Ill. |

*Section C.*—In Nova Scotia

- |  |           |
|--|-----------|
| Varney, Burton Merrill, A.B. ( <i>Harvard Univ.</i> ),<br><i>Assistant in Physiography and Meteorology,<br/>Harvard University, Cambridge,</i> | Lawrence. |
|--|-----------|

## GEOLOGIC FIELD INVESTIGATION

*Section A.*—In Montana*Section B.*—In Brazil

- |  |            |
|--|------------|
| Haynes, Winthrop Perrin, <i>Student,</i> | Hyde Park. |
|--|------------|

## GERMAN

## INTERMEDIATE COURSE

- |  |                  |
|--|------------------|
| Charbonneau, William Fielding, A.B. ( <i>Fort Worth<br/>Univ.</i> ), <i>Student,</i>   | Fort Worth, Tex. |
| Colwell, Mary Hall,  | Carlisle, Pa.    |
| Elkins, Florence Dillaway, <i>Student,</i>   | Cambridge.       |
| Fox, Herbert Benjamin, <i>Student,</i>   | New York, N.Y.   |
| Grainger, Martha Black, <i>Teacher, Keiper's School,<br/>Rittersville, Pa.</i>   | Allentown, Pa.   |
| Hemsath, William Karl, A.B. ( <i>Washington and Jef-<br/>ferson Coll.</i> ), <i>Instructor in Modern Languages,<br/>Thiel College,</i> | Greenville, Pa.  |
| Jenness, Mary Edith, A.B. ( <i>Mt. Holyoke Coll.</i> ),<br><i>Student,</i>   | Dover, N.H.      |

Mack, Maurice Alfred, <i>Student</i> ,	Cambridge.
Patten, Elizabeth Frances,	Middletown, Conn.
Ring, Barbara Taylor, M.D. ( <i>Boston Univ.</i> ), <i>Physician</i> ,	Arlington Heights.
Salgueiro, Manuel Albert, A.B. ( <i>National Coll., Argentine Republic</i> ), <i>Student</i> ,	Cambridge.
Sanger, Abbie May, B.L. ( <i>Mt. Holyoke Coll.</i> ), <i>Assistant, High School, Fall River</i> ,	Franklin, N.H.
Stegelmann, Olga Anna Frieda, <i>Teacher, John A. Andrew School, Boston</i> ,	Dorchester.
Vanderbilt, Harold Moody, <i>Student</i> ,	Cambridge.
Weigel, John Conrad, Jr., A.B. ( <i>Lombard Coll.</i> ), <i>Instructor in German and Mathematics, Lombard College, Galesburg, Ill.</i>	Joliet, Ill.
Young, Walter Albert, A.B. ( <i>Haverford Coll.</i> ), <i>Teacher of History and German, Oak Grove Seminary</i> ,	Vassalboro, Me.

## GERMAN CONVERSATION

Aloysius, Sister Mary, <i>Teacher, Mount St. Joseph Seminary</i> ,	Hartford, Conn.
Ames, Mary Edith, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher of German, High School</i> ,	Medford.
Bartlett, Ota Irene, B.L. ( <i>De Pauw Univ.</i> ), <i>Teacher</i> ,	Terre Haute, Ind.
Charbonneau, William Fielding, A.B. ( <i>Fort Worth Univ.</i> ), <i>Student</i> ,	Fort Worth, Tex.
Cuddeback, Olive, <i>Teacher of Mathematics, High School</i> ,	Paterson, N. J.
Grainger, Martha Black, <i>Teacher, Keiper's School, Rittersville, Pa.</i>	Allentown, Pa.
Kaulbach, Lenore, <i>Vice-Principal, High School, Wolfville, N.S.</i>	Mahone Bay, N.S.
Kimball, Mary Alice, <i>Student</i> ,	Newtonville.
Ring, Barbara Taylor, M.D. ( <i>Boston Univ.</i> ), <i>Physician</i> ,	Arlington Heights.
Vanderbilt, Harold Moody, <i>Student</i> ,	Cambridge.
Williams, Mary, <i>Librarian</i> ,	Brookline.
Winn, Friede, <i>Student</i> ,	So. Hadley.

## GERMAN DRAMATISTS

Adams, Lula Geralda, Ph.B. ( <i>Wesleyan Univ.</i> ), <i>Assistant, High School, Brookline</i> ,	Boston.
Cuddeback, Olive, <i>Teacher of Mathematics, High School</i> ,	Paterson, N. J.

Gillen, James Blaine, <i>Student</i> ,	Andover.
Howard, Anna Louise, A.B. ( <i>Randolph-Macon Woman's Coll.</i> ), <i>Teacher of Latin, French, and German, Atlantic Christian College, Wilson, N.C.</i>	Kinston, N.C.
Kimball, Mary Alice, <i>Student</i> ,	Newtonville.
Kolbe, Anna Clara, <i>Teacher, High School</i> ,	Cleveland, O.
Miles, Dudley Howe, A.M. ( <i>Univ. of Chicago</i> ), <i>Assistant Professor of English, Southwestern Univ.</i>	Georgetown, Tex.
Pierce, Hallett Ray, <i>Student</i> ,	Wrentham.
Price, Louisa Troth,	Cambridge.
Wedgwood, John Ralph, <i>Student</i> ,	Somerville.
Winn, Friede, <i>Student</i> ,	So. Hadley.

## HISTORY AND GOVERNMENT

### GREEK HISTORY

Canniff, Maud, <i>Teacher, High School</i> ,	Toledo, O.
Child, Kate Godfrey, <i>Teacher, St. Agnes School</i> ,	Albany, N.Y.
Dennis, Bertha Elizabeth, <i>Teacher, Benjamin Cushing School, Dorchester</i> ,	Roxbury.
Ellis, Margaret, A.B. ( <i>Randolph-Macon Woman's Coll.</i> ), <i>Teacher, Randolph-Macon Woman's College, Lynchburg, Va.</i>	Hopkinsville, Ky.
Jones, Herbert Louis, PH.B. ( <i>Hiram Coll.</i> ), <i>Teacher, Rayen School, Youngstown, O.</i>	Girard, O.
Melvin, Annie Gertrude, <i>Teacher, Public Schools</i> ,	Baltimore, Md.
Perkins, Clarence, A.B. ( <i>Syracuse Univ.</i> ), A.M. ( <i>Harvard Univ.</i> ), PH.D. ( <i>ibid.</i> ), <i>Instructor in History, University of Missouri</i> ,	Columbia, Mo.
Rawll, Ruby Eleanor, PH.M. ( <i>Northwestern Univ.</i> ), <i>Teacher, High School</i> ,	Maywood, Ill.
Wentworth, Marjorie, A.B. ( <i>Vassar Coll.</i> ),	So. Weymouth.

### ROMAN HISTORY

Briggs, Gertrude Francis, <i>Kindergartner, John G. Whittier School, Dorchester</i> ,	Roxbury.
Canniff, Maud, <i>Teacher, High School</i> ,	Toledo, O.
Churchill, Marion, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher of History, High School, Newton</i> ,	Newtonville.
Dacy, Alice Evelyn, <i>Teacher, Grammar School</i> ,	So. Boston.

- Jernegan, Marcus Wilson, PH.D. (*Univ. of Chicago*), Edgartown.  
 Munger, Lillian May, *Principal, Berkeley Street School*, Cambridge.  
 Ryan, Mary Elizabeth, *Teacher, Grammar School, So. Ashburnham*, Fitchburg.

#### MEDIAEVAL EUROPEAN HISTORY

- Baker, Arthur Eaton, A.B. (*Brown Univ.*), *Sub-Master, Agassiz Grammar School, Boston*, Jamaica Plain.  
 Butler, Harriet Louise, *Teacher-Assistant in Public Schools*, Buffalo, N.Y.  
 Castleman, Philip, *Assistant Chemist, Department of Agriculture*, Washington, D.C.  
 Dow, Elsie Storrs, A.B. (*Wheaton Coll.*), A.M. (*ibid.*), *Professor of English Literature, Wheaton College*, Wheaton, Ill.  
 Gray, Mary Louise, *Teacher, Public School, No. 20, Queen's, New York, N.Y.*, Flushing, L.I.  
 Horton, James Augustine, *Teacher, Marist College*, Atlanta, Ga.  
 Marks, Jessie Dutton, *Teacher of English, Miss Porter's School for Girls*, Springfield.  
 Nigro, Michele, *Student*, Boston.  
 Palmer, Gertrude Lucy, A.B. (*Mount Holyoke Coll.*), *Assistant, High School, Concord, N.H.*, So. Framingham.  
 Prindle, James Dwight, A.M. (*Harvard Univ.*), *Student*, W. Somerville.  
 Wiley, Katherine Ellis, *Teacher, High School, Newton*, Waltham.  
 Williamson, Pauline Brooks, *Teacher, High School*, Pulaski, Va.

#### AMERICAN HISTORY

- Bacon, Florence Thayer, *Teacher*, Moorestown, N.J.  
 Collett, Ralph Leonard, S.B. (*Iowa State Coll.*), *Student*, Cambridge.  
 Crymes, Martha, *Teacher, Men's College*, Meridian, Miss.  
 Flood, Annie Elizabeth, *Assistant Teacher, Shurtleff Grammar School, Boston*, So. Boston.  
 Griffin, Edith, A.B. (*University of Kansas*), *Student*, Lawrence, Kan.  
 Hamant, Mariette Adele, *Teacher, Belmont School*, Malden.  
 Hayden, Caroline, *Teacher, Preparatory School*, Baltimore, Md.  
 Johnson, Anabel, A.M. (*Columbia Univ.*), *Teacher of United States History, Eastern Illinois Normal School*, Burlington, Vt.



McEachern, Florence, <i>Teacher, Public Schools,</i>	Cleveland, O.
Malloy, Neice Aloysius, <i>Teacher,</i>	Freeland, Pa.
Noonan, Julia Adelaide, <i>First Assistant, Oliver Hazard Perry School, Boston,</i>	Waban.
Pearson, Aylma Young, <i>Student,</i>	Cambridge.
Pond, Gardner Dwinell, <i>Student,</i>	Winchester.
Rawll, Ruby Eleanor, <i>PH.D. (Northwestern Univ.), Teacher, High School,</i>	Maywood, Ill.
Roberts, Mary Rebecca, <i>Master's Assistant, Norcross School, Boston,</i>	So. Boston.
Smith, Stanley Cate, <i>Student,</i>	W. Roxbury.
Stoehr, Irma Leonie, <i>Teacher, Evanston Public School,</i>	Cincinnati, O.
Sweetland, George James, Jr., <i>B.L. (Hobart Coll.), M.D. (Grand Rapids Med. Coll.), Teacher of Physiology and Physical Training, High School,</i>	Everett, Wash.
Taber, Florence Richmond, <i>Teacher, Public School, No. 11, Queen's,</i>	New York, N.Y.
Westerman, Ida, <i>Teacher,</i>	Cincinnati, O.

## CIVIL GOVERNMENT

De Almeida, Alvaro Gil, <i>Student,</i>	Cambridge.
Farmer, Frank Herbert, <i>Candy Maker,</i>	Waltham.
Finkel, Joseph Wolf, <i>Student,</i>	Boston.
Fortier, James Joseph Alcée, <i>Student,</i>	New Orleans, La.
Gilkeson, Rebecca Baxter, <i>PH.B. (Univ. of Chicago), Teacher of History, Galloway College, Searcy, Ark.</i>	Staunton, Va.
Patten, Anna Carlyn,	Middletown, Conn.
Ross, Arthur Wayne, <i>Director of Commercial Department, Troy Conf. Academy, Poultney, Vt.</i>	Dorchester.
Stelle, Allen Clifford, <i>Student,</i>	Pasadena, Cal.
Story, Russell McCulloch, <i>A.B. (Monmouth Coll.), A.M. (Harvard Univ.), Student,</i>	Moline, Ill.

## MUNICIPAL GOVERNMENT

Andrews, Robert Engs, <i>Student,</i>	Brookline.
Baldwin, Edward Damon, <i>B.L. (Whitman Coll.), Student,</i>	The Dalles, Ore.
Castleman, Philip, <i>Assistant Chemist, Department of Agriculture,</i>	Washington, D.C.

Chao, Tien Lin, <i>Student</i> ,	Tientsin, China.
Chevalier, John Bayard, A.B. ( <i>Harvard Univ.</i> ), <i>Student</i> ,	Medford.
Devine, Bernard Francis, <i>Student</i> ,	So. Boston.
Ginsburg, Edward E., <i>Student</i> ,	Boston.
Harrison, John Presley Skidmore, <i>Student</i> ,	New York, N.Y.
Hebberd, John Bailey, <i>Student</i> ,	Boston.
Ho, En-ming, <i>Student</i> ,	Canton, China.
Ing, Tsu En, <i>Student</i> ,	Soo-chow, China.
Jen, Huan, <i>Student</i> ,	Amherst.
Lowell, Alfred Putnam, <i>Student</i> ,	Boston.
McGill, Margaret, A.B. ( <i>Mt. Holyoke Coll.</i> ), <i>Head</i> <i>of History Department, High School, Newton</i> ,	Newtonville.
Northcott, Sidney Thomas Hill, <i>Student</i> ,	Quincy.
Ozaki, Masanori, <i>Student</i> ,	Boston.
Richmond, Carleton Rubira, <i>Student</i> ,	Little Compton, R.I.
Scudder, Theodore Townsend, <i>Student</i> ,	Cambridge.
Smith, Ernest Allison, <i>Field-Worker, Connecticut</i> <i>Prohibition Executive Committee</i> ,	Waterbury, Conn.
Smith, Francis Abner, A.B. ( <i>Colgate Univ.</i> ), <i>Junior</i> <i>Master and Acting Head of English Depart-</i> <i>ment, Girls' High School, Boston</i> ,	Roslindale.
Story, Oliver Ewell, <i>Student</i> ,	E. Boston.
Ware, Thornton Kirkland, <i>Student</i> ,	Cambridge.
Wilson, Philip Duncan, <i>Student</i> ,	Columbus, O.

## MATHEMATICS

### ADVANCED ALGEBRA

Briggs, John De Quedville, A.B. ( <i>Harvard Univ.</i> ), <i>Teacher of Mathematics, The Hill School</i> ,	Pottstown, Pa.
Burgess, Warren Randolph, <i>Student</i> ,	Cambridge.
Hoyt, Samuel Walter, S.B. ( <i>Amherst Coll.</i> ), <i>Teacher</i> , <i>Mechanic Arts High School, Boston</i> ,	Fitchburg.
Inomata, Shinzo, <i>Student</i> ,	Providence, R.I.
Kelley, Elizabeth G., <i>Instructor in English, High</i> <i>School</i> ,	Paterson, N.J.
McCloskey, Agnes, <i>Teacher, Boston</i> ,	Dorchester.
Thomas, Harold, <i>Student</i> ,	Wollaston.

### SOLID GEOMETRY

Anita, Sister Mary, <i>Teacher, Mount St. Joseph</i> <i>Seminary</i> ,	Hartford, Conn.
Cerda, Arturo González, <i>Student</i> ,	Cambridge.

Eaton, Charles Newell, <i>Student</i> ,	Cambridge.
Frost, Norman Wentworth, <i>Student</i> ,	Cambridge.
Harlow, Hamilton, <i>Student</i> ,	Cambridge.
Hickey, Louis Walter, <i>Student</i> ,	Dorchester.
Morrison, Frederick Holton, <i>Student</i> ,	Newton, N.J.
Parker, Francis Tuckerman, <i>Student</i> ,	Salem.
Ramsay, Charles Merle, <i>Student</i> ,	Cambridge.

## TRIGONOMETRY

Bowen, Charles Gilman, <i>Student</i> ,	Boston.
Chisholm, Frank Pierce, <i>Travelling Secretary for Tuskegee Institute</i> ,	Cambridge.
Elderkin, Ella Clara, <i>Principal, Niantic School, Westerly, R.I.</i>	Roxbury.
d'Este, John Newport, <i>Student</i> ,	Salem.
Lewis, Albion Bayard, A.B. ( <i>Bates Coll.</i> ), <i>Principal, High School, Norwell</i> ,	Springfield, Me.
Lothrop, Roland Isburgh, <i>Student</i> ,	Newtonville.
Perkins, James Gerritt Bradt, <i>Student</i> ,	W. Newton.
Salisbury, Elon Galusha, <i>Teacher, South Lancaster Academy</i> ,	So. Lancaster.
Tsai, Kwo Pao, <i>Student</i> ,	Cambridge.
Walters, Catharine Elizabeth, <i>Teacher, Public Ele- mentary School, New York, N.Y.</i>	East Milton.
Wedgwood, John Ralph, <i>Student</i> ,	Somerville.
Whitis, Gertrude, B.LITT. ( <i>Univ. of Texas</i> ), <i>Teacher of Mathematics, Whitis School</i> ,	Austin, Tex.

## ANALYTIC GEOMETRY

Adams, Roger, <i>Student</i> ,	Cambridge.
Chin, Yu Shu, <i>Student</i> ,	Anhui, China.
Downey, Walter Francis, A.B. ( <i>Amherst Coll.</i> ), <i>Principal, High School, Albion, N.Y.</i>	No. Brookfield.
Echeverria, Carlos Porfirio, <i>Student</i> ,	Mexico City, Mex.
Kelly, Luke Leo, <i>Student</i> ,	Jamaica Plain.
McVey, Joseph Miller, A.B. ( <i>Delaware Coll.</i> ), <i>Assis- tant Professor of Mathematics and Engineering, Delaware College</i> ,	Leslie, Md.
Todd, Edna May, <i>Teacher, Public Schools</i> ,	Baltimore, Md.
Yen, Sung Chang, <i>Student</i> ,	Canton, China.

## CALCULUS

Black, Newton Henry, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher, Latin School, Roxbury,</i>	Cambridge.
Cummings, Harold Neff, A.B. ( <i>Bates Coll.</i> ), <i>Student,</i>	Auburn, Me.
Dixon, Edna Leola, <i>Teacher of Mathematics, Western High School,</i>	Baltimore, Md.
Emerson, Raymond, <i>Student,</i>	Concord.
Haigler, Charles Edmund, S.B. ( <i>Ohio State Univ.</i> ), <i>Instructor in Mathematics and Physics, Michi- gan College of Mines,</i>	Houghton, Mich.
Peaslee, Arthur Newton, A.M. ( <i>Harvard Univ.</i> ), <i>Instructor in Mathematics, St. George's School,</i>	Newport, R. I.
Taylor, Abram Russel, <i>Instructor in Mathematics High School,</i>	Tarrytown, N.Y.

## MUSIC

## HARMONY AND COUNTERPOINT

Atwood, James Burton, <i>Teacher of Piano and Organ,</i>	Hyde Park.
Battis, James Albert, A.B. ( <i>Harvard Univ.</i> ), <i>Teacher, Hackley School,</i>	Tarrytown, N.Y.
Bunker, Henry Alden, Jr., <i>Student,</i>	Brooklyn, N.Y.
Colleton, Alice Macaulay, <i>Teacher, Sherwin School,</i>	Roxbury.
Crownfield, Kate (Mrs.),	Cambridge.
Dow, Roland Beeman, <i>Student,</i>	Woburn.
Downes, Edwin Olin, <i>Student,</i>	Cambridge.
Dunbar, Lillian, <i>Teacher of Piano,</i>	Brookline.
Hubbard, Charles Kirwin, <i>Student,</i>	Auburn, N.Y.
Jones, Clarence Albert, <i>Teacher of Piano and Organ,</i>	Boston.
Munroe, Robert Gookin, <i>Student,</i>	Lexington.
Shafer, Robert Eugene, A.B. ( <i>Moravian Coll.</i> ), <i>In- structor, Nazareth Hall Military Academy,</i>	Nazareth, Pa.
Strong, Jessie Glaze, <i>Teacher, Public Schools,</i>	Galesburg, Ill.

## ANALYSIS OF MUSIC

Bunker, Philip Hackett, <i>Student,</i>	Brooklyn, N.Y.
Densmore, John Hopkins, A.B. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Brookline.
Fox, Herbert Benjamin, <i>Student,</i>	New York, N.Y.
Harrington, Charles Peter, Jr., <i>Student,</i>	Charlestown.

Hopkins, Nathaniel Woodworth, <i>Student</i> ,	Boston.
Niles, Nathaniel William, <i>Student</i> ,	Brookline.
Viles, Bertram Simonds, <i>Student</i> ,	Swampscott.

## PHILOSOPHY AND PSYCHOLOGY

### INTRODUCTION TO PHILOSOPHY

Bigelow, Clara Philena, <i>Student</i> ,	Cambridge.
Davis, Nathan Smith, Jr., <i>Student</i> ,	Chicago, Ill.
Dodd, Mabel, <i>Student</i> ,	Wellesley.
Ho, En-ming, <i>Student</i> ,	Canton, China.
Hsieh, En-lung, <i>Student</i> ,	Canton, China.
Joyner, Herbert Newton, <i>Student</i> ,	Cambridge.
Li, Kuo Chi, <i>Student</i> ,	Canton, China.
Moore, Jessie Elizabeth, <i>Teacher, Public Schools</i> ,	Indianapolis, Ind.
Nash, Henry Fontaine, <i>Student</i> ,	Cambridge.
Reed, Annie Josephine, <i>Teacher, Everett School</i> ,	Boston.
Scott, Helen Jessie, <i>Teacher, Everett School, Boston</i> ,	Cambridge.

### INTRODUCTION TO ETHICS

Adams, William Cushing, A.B. ( <i>Bowdoin Coll.</i> ), S.T.B. ( <i>Harvard Univ.</i> ), <i>Clergyman</i> ,	Bangor, Me.
Badger, Abner Anderson, A.B. ( <i>Bowdoin Coll.</i> ), <i>Superintendent of Schools, Weymouth</i> ,	E. Weymouth.
Cushwa, Frank William, A.B. ( <i>Univ. of West Vir- ginia</i> ), A.M. ( <i>Harvard Univ.</i> ), <i>Instructor in English, Phillips Exeter Academy</i> ,	Exeter, N.H.
Dacy, Alice Evelyn, <i>Teacher, Grammar School</i> ,	So. Boston.
Emery, Ethel Grace, <i>Assistant Principal, Normal Kindergarten School</i> ,	Havana, Cuba.
Merrill, Alice Marion, <i>Head of English Depart- ment, English High School</i> ,	Somerville.
Moore, Ida, M.E. ( <i>Keystone Normal School</i> ), <i>Teacher</i> ,	Phoenixville, Pa.
Moore, Jessie Elizabeth, <i>Teacher, Public Schools</i> ,	Indianapolis, Ind.
Pease, Marguerite Ranney, <i>Teacher</i> ,	Colorado Springs, Colo.
Sloovere, Fred Joseph de, <i>Student</i> ,	Webster.
Southard, Mabel Austin, S.B. ( <i>Univ. of Minnesota</i> ), M.D. ( <i>Johns Hopkins Medical School</i> ),	Boston.
Watts, Rowland Howard, <i>Principal of Grammar School, Framingham</i> ,	Reading.



## HISTORY OF MODERN PHILOSOPHY

- Brown, Emily Frances, A.B. (*Wellesley Coll.*), *Head of English Department, Milwaukee Downer College,* Milwaukee, Wis.  
 Joyner, Herbert Newton, *Student,* Cambridge.  
 Nigro, Michele, *Student,* Boston.  
 Stegelmann, Olga Anna Frieda, *Teacher, John A. Andrew School, Boston,* Dorchester.  
 Whittemore, Jennie Mabel, A.B. (*Univ. of Michigan*), *Teacher of English, Lake View High School, Chicago, Ill.* Reading.

## METAPHYSICS

- Beeson, William James, M.S. (*Alabama Polytech. Inst.*), M.A. (*Clark Univ.*), *Head of Department of Psychology and Education, Central Plains College,* Plainview, Tex.  
 Chen, Tung Chung, *Student,* Canton, China.  
 Ch'in, Fên, *Student,* Chia-Ting, China.  
 Chung, Shih-Ming, *Student,* Tientsin, China.  
 Craft, James Charles, *Student,* Wilmington, N.C.  
 Groton, John Mansfield, *Student,* Philadelphia, Pa.  
 Gruver, Harvey Snyder, A.B. (*Otterbein Univ.*), *Student,* Worthington, O.  
 Patrick, Ellen Maria, *Retired Teacher,* Hopedale.

## DESCRIPTIVE PSYCHOLOGY

- Carpenter, Morris Beck, *Student,* Wakefield.  
 Dodd, Mabel, *Student,* Wellesley.  
 Elderkin, Ella Clara, *Principal of Niantic School, Westerly, R. I.* Roxbury.  
 Elliott, Luther Forrester, *Teacher, Boston Y.M.C.A. and Boston Evening High Schools, Boston,* Watertown.  
 Feng, Hsi Yün, *Student,* Tientsin, China.  
 Fleming, Patrick Joseph, M.D. (*Tufts Coll.*), *Physician,* Cambridge.  
 Furfey, John Hugh, A.B. (*Dartmouth Coll.*), *Teacher, Overlook Academy, Norwalk, Conn.* Brookline.  
 Greenfield, Ben Spencer, *Student,* Philadelphia, Pa.  
 Gregory, Frances May, *Teacher, Weaver School,* Dayton, O.  
 Jones, Irving Willard, *Teacher, Pedagogic Department, State Normal School,* Plymouth, N.H.

Lowell, Alfred Putnam, <i>Student</i> ,	Boston.
McIntosh, Frederick, <i>Business</i> ,	Nahant.
McPike, Antoinette,	New York, N.Y.
Merrick, Sara Newcomb, M.D. ( <i>Boston Univ.</i> <i>Medical School</i> ), <i>Physician</i> ,	Boston.
Rogers, Lyman Willets, <i>Student</i> ,	Cambridge.
Shepherd, Gertrude, <i>Student</i> ,	Cambridge.
Silvester, Jane Boyd, <i>Trained Nurse</i> ,	Washington, D.C.
Thomas, Nellie Tapley, <i>Teacher</i> , <i>Margaret Eaton</i> <i>School of Literature and Expression</i> , <i>Toronto</i> , <i>Canada</i> ,	Ottawa, Ont.
Wilson, Thornton Gray, <i>Student</i> ,	Mansfield.

## APPLIED PSYCHOLOGY

Bates, Elizabeth Carver, <i>Teacher of Cooking</i> , <i>Elementary Schools</i> ,	New York, N.Y.
Farrell, Louis Treanor, <i>Student</i> ,	Roxbury.
Feng, Hsi Yün, <i>Student</i> ,	Tientsin, China.
Jones, Irving Willard, <i>Teacher</i> , <i>Pedagogic Department</i> , <i>State Normal School</i> ,	Plymouth, N.H.
Leavitt, Charles Arthur, <i>Student</i> ,	Roxbury.
McIntosh, Frederick, <i>Business</i> ,	Nahant.
Mereness, Seth A., M.D. ( <i>Union Univ.</i> ), <i>Physician</i> ,	Milford, N.Y.
Moore, Mary Norman, <i>President of Athens College</i> ,	Athens, Ala.
Price, Louisa Troth,	Cambridge.
Shepherd, Gertrude, <i>Student</i> ,	Cambridge.
Silvester, Jane Boyd, <i>Trained Nurse</i> ,	Washington, D.C.
Wilson, Thornton Gray, <i>Student</i> ,	Mansfield.

## PHYSICAL EDUCATION

## PRACTICE

Aird, Margaret Helen, <i>Student</i> ,	Cambridge.
Airth, Charlotte Ethel, <i>Teacher</i> , <i>Ottawa Ladies' College</i> , <i>Ottawa</i> , <i>Ont.</i>	Renfrew, Ont.
Armbruster, Amelia Emma, <i>Assistant Physical Director</i> , <i>Public Schools</i> ,	Toledo, O.
Atkinson, Elizabeth, <i>Teacher</i> , <i>Ward School</i> ,	Chicago, Ill.
Baker, John William, S.B. ( <i>Univ. of Pennsylvania</i> ), <i>Teacher</i> ,	Mobile, Ala.
Beal, George Hamilton, A.B. ( <i>Princeton Univ.</i> ), <i>Teacher</i> , <i>Austin High School</i> , <i>Chicago</i> , <i>Ill.</i>	Oak Park, Ill.
Bcan, Mary S., <i>Teacher</i> ,	Wichita, Kan.

Bennett, Anna Ruth, <i>Student</i> ,	Pawtucket, R.I.
Blood, Ernest Artell, <i>Director of Physical Training, State Normal and Training School</i> ,	Potsdam, N.Y.
Boggs, Mary Harvey, <i>Teacher</i> ,	Marlboro.
Brooks, Verna, <i>Student</i> ,	Macon, Ill.
Brown, William Ellwood, <i>Assistant Physical Director, Central Y. M. C. A.</i>	Philadelphia, Pa.
Browne, Alfred, M.D. ( <i>Univ. of North Carolina</i> ), <i>Physical Director, High School, Newton</i> ,	Newtonville.
Cameron, Charles Putnam, <i>Teacher, Municipal Gymnasium, Brookline</i> ,	Dorchester.
Campbell, Pearle Lucile, <i>Teacher</i> ,	Marion, O.
Capote, Dulce M., <i>Maestra de la Habana</i> ,	Havana, Cuba.
Card, Wilbur Wade, A.B. ( <i>Trinity Coll. N.C.</i> ), <i>Director of Physical Training, Trinity College</i> ,	Durham, N. C.
Carlson, Christina,	Idaho Springs, Colo.
Chapman, Ernest Arthur, <i>Gymnasium Director, St. Andrew's College</i> ,	Toronto, Ont.
Cochran, Helen Finney, A.B. ( <i>Oberlin Coll.</i> ), <i>Director of Physical Training, The Western College for Women, Oxford, O.</i>	Cincinnati, O.
Collins, John Aloysius, <i>Instructor, Central High School</i> ,	Detroit, Mich.
Cook, William W., <i>Student</i> ,	Brookline.
Coulter, Calvin Brewster, A.M. ( <i>Princeton Univ.</i> ),	Chicago, Ill.
Craig, Devona Elizabeth, <i>Student</i> ,	Philadelphia, Pa.
Craig, Glodean Celestine, G.G. ( <i>Temple Univ.</i> ), <i>Student</i> ,	Philadelphia, Pa.
Cromie, William James, <i>Instructor in Gymnastics, University of Pennsylvania</i> ,	W. Philadelphia, Pa.
Crowell, Archie Durkee, <i>Assistant Physical Instructor, Massachusetts School for Feeble Minded</i> ,	Waverley.
Cumberland, James Garfield, <i>Supervisor, Public Schools</i> ,	Newark, N.J.
Curtis, May Louise, <i>Teacher</i> ,	Tarrytown, N.Y.
Dennis, Clara Gertrude, <i>Kindergartner, Public Schools, Boston</i> ,	Roxbury.
DeWitt, Edward Nicholas, S.B. ( <i>Muskingum Coll.</i> ), <i>Physical Director, Muskingum College</i> ,	Hastings, Minn.
Dowd, Laurence Francis, <i>Teacher of Physical Culture, High School</i> ,	Holyoke.
Durfee, Evelyn Farnham, <i>Teacher, Abbot Academy, Andover</i> ,	Wales, Me.

- Eaton, Philip Libby, A.B. (*Harvard Univ.*),  
*Student*, W. Somerville.
- Eaton, William Newcomb, *Machinist*, E. Milton.
- Eckersall, Jessie May, *Student*, Chicago, Ill.
- Egbert, J. Evelyn, *Director of Physical Education*,  
*Sterrett School, Pittsburg, Pa.* Wilkinsburg, Pa.
- Ernst, Frank Louis, *Teacher of Gymnastics*, Adams.
- Featherstone, Fred Nuhn, Conneaut, O.
- Fessenden, Marian Thornecroft, *Student*, Chelsea.
- Field, Osmond Francis, *Physical Director, Y.M.C.A.*,  
*Grand Rapids, Mich.* Lowell.
- Finley, Lovette Rowland, *Student*, Geneseo, N.Y.
- Freer, Louise, A.B. (*Cornell Coll.*), *Physical*  
*Director, Y.W.C.A., Racine, Wis.* Mt. Vernon, Iowa.
- Gardiner, Vera, *Teacher, Public School*, Chicago, Ill.
- Gardner, Blanche, *Instructor, Mississippi Indus-*  
*trial Institute and College, Columbus, Miss.* Dalton, Ga.
- Giles, Walter Arthur, B.H. (*Springfield Training*  
*School*), *Physical Director, Fisk University*, Nashville, Tenn.
- Golden, John Francis, *Physical Director, Y.M.C.A.* Norwich, N.Y.
- Goodyear, Nolan Austin, A.B. (*Emory Coll.*), A.M.  
*(ibid.)*, *Director of Physical Training, and*  
*Adjunct Professor of Languages, Emory*  
*College*, Oxford, Ga.
- Graves, Myra Norris, *Assistant Director of Physical*  
*Training, Public Schools*, Atlanta, Ga.
- Griffin, Emily Johns, Kenosha, Wis.
- Gundlach, Caroline Mary, *Teacher, Public Schools*,  
*St. Paul, Minn.* White Bear, Minn.
- Habenicht, Herbert Rudolph, *Physical Director and*  
*Student, Newberry College, Newberry, S.C.* Columbia, S.C.
- Hale, Wilfred Silvester, M.D. (*Albany Med. Coll.*),  
*Physician*, Albany, N.Y.
- Hallett, Marion Marble, *Teacher, The Castle, Tarry-*  
*town, N. Y.* So. Boston.
- Hampson, Arthur Chester, *Student*, E. Orange, N. J.
- Hartman, Rowena Belle, *Student*, Millville, Pa.
- Hartnett, Frank, *Printer*, E. Milton.
- Hastings, Horatius Bonar, A.B. (*Harvard Univ.*),  
A.M. (*ibid.*), *Publisher*, Boston.
- Helmer, Edith Beatrice, *Student*, Mechanicsville, Ia.
- Henderson, Nellie Marion, *Student*, Roxbury.
- Henry, Miriam, *Teacher of Elocution, Little Rock*,  
*Ark.* Russellville, Ark.

- Hicks, Louisa Putnam, *Physical Director, Oneonta, N. Y.*
- Higgins, Alice Anna, *Student,*
- Higgins, George Judson, *Physical Director, Plymouth Gymnasium Association,*
- Higgins, Marguerite Elizabeth, *Student,*
- Hill, Gertrude, *Teacher, Public Schools,*
- Holmes, Sidney Spencer, *Physical Director, Westbrook Seminary,*
- Hosmer, Milicent, A.B. (*Wells Coll.*), *Student,*
- Huegin, Gretchen, *Physical Director, Northwestern University,*
- Jenckes, Alice Emily, *Teacher, Ladies' College, Halifax, N.S.*
- Jones, Richard, *Machinist,*
- Keene, Charles Herbert, A.B. (*Harvard Univ.*), M.D. (*ibid.*), *Physician,*
- Klein, Lillian, *Teacher, Public School,*
- Kramer, George Reinhart Dick, Jr., *Student,*
- Lang, Eleanor Elizabeth, *Teacher, Edwin H. Fidler School,*
- Lentz, Suzanne Mark, S.B. (*Irving Coll.*), *Supervisor of Vocal Music, Public Schools, Chambersburg, Pa.*
- MacDonald, Thomas G., *Physical Director, Seattle Athletic Club,*
- McGrath, Mary Veronica, *Instructor, Municipal Gymnasium,*
- MacLeod, Mary Lorraine, A.M. (*Cornell Coll.*), *Dean of Women, and Physical Director, Cornell College,*
- Mason, Nancy, *Student,*
- Mathis, Soflena Estella, *Physical Director, Public Schools,*
- Meeker, May Florence, *Teacher, Public School,*
- Mena, Aurora, *Teacher and Supervisor, Havana Schools,*
- Mitchell, Jane Edwina, *Instructor in Physical Training, State Normal School, Fitchburg,*
- Moakley, Helen Theresa,
- Moore, Helen Morton, *Teacher, Private Work,*
- Morse, Lillian Alice, *Physical Instructor, Calvary Baptist Institute,*
- Worcester.
- So. Boston.
- Brookline.
- So. Boston.
- St. Paul, Minn.
- Portland, Me.
- Somerville.
- Evanston, Ill.
- Sherbrooke, Can.
- Quincy.
- Dorchester.
- Chicago, Ill.
- Cedar Falls, Ia.
- Germantown, Pa.
- Altoona, Pa.
- Seattle, Wash.
- Brookline.
- Mt. Vernon, Ia.
- Fort Smith, Ark.
- Galesburg, Ill.
- Brooklyn, N.Y.
- Havana, Cuba.
- Detroit, Mich.
- Ithaca, N.Y.
- Millbury.
- Providence, R.I.



Moser, Hildred Daisy, A.B. ( <i>Univ. of Wisconsin</i> ), <i>Student</i> ,	Madison, Wis.
Murphy, Helen Mercedes, <i>Student</i> ,	Newton Upper Falls.
Murray, William Alexander, <i>Special Instructor</i> , <i>Y. M. C. U.</i> , Boston,	Milton.
Myers, Minnie Elizabeth, <i>Supervisor of Physical</i> <i>Training, Public Schools</i> ,	Youngstown, O.
Nason, Samuel Kelsey, <i>Physical Director, Y.M.C.A.</i>	Malden.
Opdyke, Agnes, A.B. ( <i>Radcliffe Coll.</i> ), <i>Assistant</i> <i>to the Director, Trade School for Girls, Boston</i> ,	New York, N.Y.
Osborne, Grace Winthrop, <i>Teacher, Springfield</i> ,	Cambridge.
Parker, Florence Ann, B.L. ( <i>Univ. of California</i> ),	Alameda, Cal.
Parlá, Angélica, <i>Teacher</i> ,	Havana, Cuba.
Riddell, Elsie Rutherford,	Toronto, Can.
Roberts, Sarah, <i>Physical Instructor, Public Schools</i> <i>and Y. W. C. A.</i> , Montreal, Can.	Concord, N.H.
Robinson, Ralph Porter, <i>Physical Director, Boys'</i> <i>Department, High School, Leominster</i> ,	Bradford.
Rochelle, Zalpheus Aaron, A.B. ( <i>Trinity Coll.</i> , <i>N. C.</i> ), <i>Principal, State High School, Barn-</i> <i>ardsville, N. C.</i>	Durham, N.C.
Roemer, Carl B., <i>Teacher</i> ,	Mankate, Minn.
Ruggles, Louisa Kingsley, <i>Physical Director, Ingle-</i> <i>side School, New Milford, Conn.</i>	Wakefield.
Sanford, Carlton Belisle, <i>Physical Director, Y.M.C.A.</i>	Salem.
Sawin, Harriette Fisher, A.B. ( <i>Wellesley Coll.</i> ),	Cambridge.
Schaefer, Hedwig Sophie, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher of Modern Languages, The Rayen</i> <i>School</i> ,	Youngstown, O.
Schwartz, Elsie Emma, <i>Physical Director, High</i> <i>School</i> ,	Omaha, Neb.
Shepard, Ida Holland,	Beaumont, Tex.
Simon, Arthur Leslie, M.D. ( <i>Tufts Coll.</i> ), <i>Physician</i> ,	Waltham.
Skinner, Florence Roberts, <i>Assistant Supervisor of</i> <i>Physical Training, Public Schools, Washing-</i> <i>ton, D. C.</i>	Malone, N.Y.
Smith, Lulu Belle, PH.B. ( <i>Syracuse Univ.</i> ), <i>Teacher</i> , <i>High School</i> ,	State College, Pa
Smith, Maurice Richard,	Dorchester.
Sparks, William Cone, <i>Teacher of Physical Culture</i> , <i>Maine Wesleyan Seminary</i> ,	Bowdoinham, Me.
Specht, Henrietta Antoinette, A.B. ( <i>Normal Coll.</i> ), <i>Teacher, Public School, No. 110</i> ,	New York, N.Y.

- Spencer, Francis Edwin, A.B. (*Northwestern Univ.*),  
*Physical Director, Harvard School, Los Angeles, Cal.*
- Sprague, Charlotte Ottilie, *Student,*
- Squires, Bertha Clay, *Nurse,*
- Stern, Minerva, G.G. (*Temple Univ.*), *Student,*
- Sudlow, Ethel, *Teacher,*
- Thomas, Ellen Haines, *Teacher,*
- Thompson, Florence Washington, *Teacher,*
- Tipple, Adeline May, *Supervisor of Physical Culture,*
- Torrance, Marjorie, *Instructor in Physical Training, Macdonald College,*
- Tracy, Mildred Leavitt,
- True, Frances Dora, *Acadia Seminary, Wolfville, N.S.*
- Tyrrell, Allegra Jeanne, *Student,*
- Upham, Ernest Trueman, *Physical Director, Y. M. C. L., and Director of Physical Training, Public Schools, No. Attleboro,*
- Viall, Mildred Peck, *Teacher, Warren and Riverside, R. I.*
- Vognild, Selma Marie, PH.B. (*Univ. of Wisconsin*),  
*Teacher of English and Elocution, High School, Fort Atkinson, Wis.*
- Wagner, Margaret Melvina, B.L. (*Bucknell Univ.*),  
*Physical Director, Wilson College, Chambersburg, Pa.*
- Waldorf, J. Myron, *Physical Director, Y. M. C. A.*
- Wallace, Anna Eleanor, *Teacher of Elocution, Physical Training and Dancing,*
- Wallis, Louis Theodore, A.B. (*Dartmouth Coll.*),  
*Physical Director, Volkmann School, Boston,*
- Warner, Nellie Knight,
- Webster, Marion Gertrude,
- West, Rhobe Livermore,
- Westlake, Lucy Jane, A.B. (*Oberlin Coll.*), *Physical Director, Home and Day School,*
- White, Frank Warren, M.D. (*Tufts Med. School.*),  
*Director, Normal School of Physical Education, Temple University,*
- Whitman, Ernest Raymond, *Gymnasium and Athletic Director, Clark College and Bancroft School,*
- Centralia, Ill.
- Milwaukee, Wis.
- Brighton, Colo.
- Philadelphia, Pa.
- Washington, Ga.
- Ednor, Md.
- New Bedford.
- Stillwater, Minn.
- Montreal, Can.
- Waterville, Me.
- Portland, Me.
- Cambridge.
- Mattapan.
- Warren, R. I.
- Chicago, Ill.
- Lewisburg, Pa.
- Albany, N.Y.
- Providence, R. I.
- Jamaica Plain.
- Catonsville, Md.
- Hancock, N.H.
- Dorchester Centre.
- Detroit, Mich.
- Philadelphia, Pa.
- Worcester.

Wicks, Albert Julius, <i>Assistant Physical Director,</i> <i>Y. M. C. A.</i>	Lynn.
Williams, Lillian E., <i>Student,</i>	Pittsfield, Ill.
Williams, Mary Edith, A.M. ( <i>Univ. of Illinois</i> ), <i>Assistant Instructor, University of Illinois,</i>	Urbana, Ill.
Williamson, Etta Lucile, <i>Teacher, Public Schools,</i> <i>West Chester, Pa.</i>	Philadelphia, Pa.
Wilson, Frances Delaware, <i>Student,</i>	Norfolk, Va.
Wood, Howard, <i>Teacher, High School,</i>	Sioux Falls, So. Dak.
Woodside, John Nelson,	Cambridge.
Woodward, Arthur Clinton, S.B. ( <i>Univ. of Ver-</i> <i>mont</i> ), <i>Athletic Director, Hitchcock Military</i> <i>Academy, San Rafael, Cal.</i>	Taunton.
Yates, Grace Ella,	Toronto, Can.
Yeakle, Juliet Vinton, <i>Physical Director, Normal</i> <i>School,</i>	Whitewater, Wis.
Yeaw, Minnie Velna, <i>Teacher, New Trier High</i> <i>School, Kenilworth, Ill.</i>	Evanston, Ill.
Young, Walter Albert, A.B. ( <i>Haverford Coll.</i> ), <i>Teacher of History and German, Oak Grove</i> <i>Seminary,</i>	Vassalboro, Me.
Zarfos, Lewis Norman, <i>Instructor in Gymnastics,</i> <i>Univ. of Wisconsin,</i>	Red Lion, Pa.

## THEORY

Atkinson, Elizabeth, <i>Teacher, Ward School,</i>	Chicago, Ill.
Beal, George Hamilton, A.B. ( <i>Princeton Univ.</i> ), <i>Teacher, Austin High School, Chicago, Ill.</i>	Oak Park, Ill.
Bean, Mary S., <i>Teacher,</i>	Wichita, Kan.
Blood, Ernest Artell, <i>Director of Physical Train-</i> <i>ing, State Normal and Training School,</i>	Potsdam, N.Y.
Boggs, Mary Harvey, <i>Teacher,</i>	Marlboro.
Brooks, Verna, <i>Student,</i>	Macon, Ill.
Brown, Helen Jefferson,	Cambridge.
Brown, William Elwood, <i>Assistant Physical Di-</i> <i>rector, Central Branch Y. M. C. A.</i>	Philadelphia, Pa.
Cameron, Charles Putnam, <i>Teacher, Municipal</i> <i>Gymnasium, Brookline,</i>	Dorchester.
Cappé, Benjamin H., <i>Physical Director, Y. M. C. A.</i>	Somerville.
Chapman, Ernest Arthur, <i>Gymnasium Director,</i> <i>St. Andrew's College,</i>	Toronto, Can.
Collins, John Aloysius, <i>Instructor, Central High</i> <i>School,</i>	Detroit, Mich.

- Cook, William W., *Student*, Brookline.
- Craig, Glodean Celestine, G.G. (*Temple Univ.*), Philadelphia, Pa.  
*Student*,
- Cromie, William James, *Instructor in Gymnastics*, Philadelphia, Pa.  
*University of Pennsylvania*,
- Crowell, Archie Durkee, *Assistant Physical Instructor*, Waverley.  
*Massachusetts School for Feeble Minded*,
- De Witt, Edward Nicholas, S.B. (*Muskingum Coll.*), Hastings, Minn.  
*Physical Director, Muskingum College*,
- Durfee, Evelyn Farnham, *Teacher, Abbot Academy*, Wales, Me.  
*Andover*,
- Eaton, Philip Libby, A.B. (*Harvard Univ.*), Student, W. Somerville.
- Eckersall, Jessie May, *Student*, Chicago, Ill.
- Ernst, Frank Louis, *Teacher of Gymnastics*, Adams.
- Fessenden, Marian Thornecroft, *Student*, Chelsea.
- Finley, Lovette Rowland, *Student*, Geneseo, N.Y.
- Fletcher, Ruth Eulalia, *Student*, Somerville.
- Gardiner, Vera, *Teacher, Public School*, Chicago, Ill.
- Giles, Walter Arthur, B.H. (*Springfield Training School*), Nashville, Tenn.  
*Physical Director, Fisk University*,
- Goodyear, Nolan Austin, A.B. (*Emory Coll.*), A.M. Oxford, Ga.  
(*ibid.*), *Director of Physical Training, and Adjunct Professor of Language, Emory College*,
- Graves, Myra Norris, *Assistant Director of Physical Training, Public Schools*, Atlanta, Ga.
- Griffin, Emily Johns, Kenosha, Wis.
- Gundlach, Caroline Mary, *Teacher, Public Schools*, White Bear, Minn.  
*St. Paul, Minn.*
- Hale, Wilfred Silvester, M.D. (*Albany Medical Coll.*), Albany, N.Y.  
*Physician*,
- Hampson, Arthur Chester, *Student*, East Orange, N. J.
- Hartman, Rowena Belle, *Student*, Millville, Pa.
- Higgins, George Judson, *Physical Director, Plymouth Gymnasium Association*, Brookline.
- Hosmer, Milicent, A.B. (*Wells Coll.*), Pupil and Somerville.  
*Instructor, Sargent School*,
- Keene, Charles Herbert, A.B. (*Harvard Univ.*), Dorchester.  
M.D. (*ibid.*), *Physician*,
- Klein, Lillian, *Teacher, Public Schools*, Chicago, Ill.
- Kramer, George Reinhart Dick, Jr., *Student*, Cedar Falls, Ia.
- Lentz, Suzanne Mark, S.B. (*Irving Coll.*), *Supervisor of Vocal Music, Public Schools, Chambersburg, Pa.* Altoona, Pa.

MacDonald, Thomas G., <i>Physical Director, Seattle Athletic Club,</i>	Seattle, Wash.
Mason, Nancy, <i>Student,</i>	Fort Smith, Ark.
Mathis, Soflena Estella, <i>Physical Director, Public Schools,</i>	Galesburg, Ill.
Meeker, May Florence, <i>Teacher, Elementary School,</i>	Brooklyn, N.Y.
Mena, Aurora, <i>Teacher and Supervisor, Havana Schools,</i>	Havana, Cuba.
Mitchell, Jane Edwina, <i>Instructor in Physical Training, State Normal School, Fitchburg,</i>	Detroit, Mich.
Moser, Hildred Daisy, A.B. ( <i>Univ. of Wisconsin</i> ), <i>Student,</i>	Madison, Wis.
Murray, Mary Frances, <i>Student,</i>	Worcester.
Opdyke, Agnes, A.B. ( <i>Radcliffe Coll.</i> ), <i>Assistant to the Director, Trade School for Girls, Boston,</i>	New York, N.Y.
Osborne, Grace Winthrop, <i>Teacher, Springfield,</i>	Cambridge.
Parker, Florence Ann, B.L. ( <i>Univ. of California</i> ),	Alameda, Cal.
Riddell, Elsie Rutherford,	Toronto, Can.
Roberts, Sarah, <i>Physical Instructor, Public Schools of Montreal and Y. W. C. A.</i>	Concord, N.H.
Robinson, Ralph Porter, <i>Physical Director, Boys' Department, High School, Leominster,</i>	Bradford.
Rochelle, Zalphus Aaron, A.B. ( <i>Trinity Coll., N.C.</i> ), <i>Principal, State High School, Barnardsville, N.C.</i>	Durham, N.C.
Roemer, Carl Bruno, <i>Physical Director, Y. M. C. A.</i>	Mankato, Minn.
Ross, Arthur Wayne, <i>Director of Commercial Department, Troy Conference Academy, Poultney, Vt.</i>	Dorchester.
Sanford, Carlton Belisle, <i>Physical Director, Y. M. C. A.</i>	Salem.
Sawin, Harriette Fisher, A.B. ( <i>Wellesley Coll.</i> ),	Cambridge.
Shepard, Ida Holland,	Beaumont, Tex.
Smith, Lulu Belle, PH.B. ( <i>Syracuse Univ.</i> ), <i>Teacher, High School,</i>	State College, Pa.
Smith, Maurice Richard,	Dorchester.
Sparks, William Cone, <i>Physical Culture Teacher, Maine Wesleyan Seminary,</i>	Bowdoinham, Me.
Specht, Henrietta Antoinette, A.B. ( <i>Normal Coll.</i> ), <i>Teacher, Public School, No. 110,</i>	New York, N.Y.
Spencer, Francis Edwin, A.B. ( <i>Northwestern Univ.</i> ), <i>Physical Director, Harvard School, Los Angeles, Cal.</i>	Centralia, Ill.



Stern, Minerva, G.G. ( <i>Temple Univ.</i> ), <i>Student</i> ,	Philadelphia, Pa.
Sweetland, George James, Jr., B.L. ( <i>Hobart Coll.</i> ), M.D. ( <i>Grand Rapids Medical School</i> ), <i>Teacher</i> <i>of Physiology and Physical Training, High</i> <i>School</i> ,	
Thomas, Ellen Haines, <i>Teacher</i> ,	Everett, Wash.
Tipple, Adeline May, <i>Supervisor of Physical Cul-</i> <i>ture</i> ,	Ednor, Md.
Torrance, Marjorie, <i>Physical Instructor, Macdonald</i> <i>College</i> ,	Stillwater, Minn.
Tracy, Mildred Leavitt,	Montreal, Can.
True, Frances Dora, <i>Teacher, Acadia Seminary</i> , <i>Wolfville, N. S.</i>	Waterville, Me.
Tyrrell, Allegra Jeanne, <i>Student</i> ,	Portland, Me.
Wagner, Margaret Melvina, B.L. ( <i>Bucknell Univ.</i> ), <i>Physical Director, Wilson College, Chambers-</i> <i>burg, Pa.</i>	Cambridge.
Waldorf, J. Myron, <i>Teacher, Physical Director</i> , <i>F. M. C. A.</i>	Lewisburg, Pa.
Wallis, Louis Theodore, A.B. ( <i>Dartmouth Coll.</i> ), <i>Physical Director, Volkmann School, Boston</i> ,	Albany, N.Y.
West, Rhobe Livermore,	Jamaica Plain.
White, Frank Warren, M.D. ( <i>Tufts Medical School</i> ), <i>Director, Normal School of Physical Education</i> , <i>Temple University</i> ,	Dorchester Centre.
Whiting, Lewis Daniel, <i>Instructor, High School</i> , <i>Waltham, and Y. M. C. U., Boston</i> ,	Philadelphia, Pa.
Whitman, Ernest Raymond, <i>Gymnasium and Ath-</i> <i>letic Director, Clark College and Bancroft</i> <i>School</i> ,	Cambridge.
Wicke, Albert Julius, <i>Assistant Physical Director</i> , <i>F. M. C. A.</i>	Worcester.
Williams, Mary Edith, A.M. ( <i>Univ. of Illinois</i> ), <i>Assistant Instructor, Women's Gymnasium</i> , <i>University of Illinois</i> ,	Lynn.
Woodside, John Nelson,	Urbana, Ill.
Yates, Grace Ella, <i>Teacher, Physical Training</i> , <i>Westbourne School</i> ,	Cambridge.
Yeaw, Minnie Velna, <i>Teacher, New Trier High</i> <i>School</i> ,	Toronto, Can.
Zarfes, Lewis Norman, <i>Physical Director, State</i> <i>Normal School, Geneseo, N. Y.</i>	Kenilworth, Ill.
	Red Lion, Pa.

## PHYSICS

## ADMISSION REQUIREMENTS

Chipman, Guy Wilbur, A.B. ( <i>Colby Coll.</i> ), <i>Master in Science, Friends' Central School,</i>	Philadelphia, Pa.
Clough, Harvey Burnett, A.B. ( <i>Amherst Coll.</i> ), <i>Principal, High School, Huntington,</i>	W. Willington, Conn
Cole, Harriet Isabelle, A.B. ( <i>Middlebury Coll.</i> ), <i>Teacher of Science, Hopkins Academy, Hadley,</i>	Barre.
Coppinger, Katherine Gertrude, A.B. ( <i>Boston Univ.</i> ), <i>Teacher, West Lebanon, N.H.</i>	Needham Heights.
Cromack, Alice Prentiss, A.B. ( <i>Wellesley Coll.</i> ), <i>Student,</i>	Malden.
Dolbear, Mary Elizabeth, S.B. ( <i>Tufts Coll.</i> ), <i>Teacher, Hosmer Hall, St. Louis, Mo.</i>	Tufts College.
Dunn, William S., A.B. ( <i>Bates Coll.</i> ), <i>Principal, High School,</i>	Avon.
Edmands, Charles Francis Willard, A.B. ( <i>Clark Univ.</i> ), <i>Teacher of Mathematics and Science, High School, Fitchburg,</i>	Westboro.
Flood, Clarence Nathaniel, A.B. ( <i>Colby Coll.</i> ), <i>Principal, High School, Winslow, Me.</i>	So. Paris, Me.
Griffin, Timothy Walter, <i>Student,</i>	Jamaica Plain.
Immaculata, Sister Mary, <i>Teacher, Mount St. Mary's Seminary,</i>	Scranton, Pa.
Kearney, Maurice Walter, A.B. ( <i>Holy Cross Coll.</i> ), <i>Professor of Mathematics and Science, Drury High School,</i>	No. Adams.
Kieff, Blanche, S.B. ( <i>Valparaiso Univ.</i> ), <i>Teacher,</i>	Lafayette, Ind.
Leo, Sister Mary, <i>Teacher, St. Cecilia Academy,</i>	Scranton, Pa.
Li, Chien Luan, <i>Student,</i>	Tientsin, China.
Liu, Thon Fah, <i>Student,</i>	Tientsin, China.
McCann, Matthew Robert, Jr., A.B. ( <i>Holy Cross Coll.</i> ), A.M. ( <i>ibid.</i> ), <i>Teacher of Sciences, Turners Falls,</i>	Worcester.
O'Hern, Dennis William, A.B. ( <i>Allegheny Coll.</i> ), <i>President, Little Rock College,</i>	Little Rock, Ark.
Perkins, Everett Valentine, A.B. ( <i>Univ. of Vermont</i> ), <i>Principal, High School,</i>	Enosburg Falls, Vt.
Rue, Bettie Anne, A.B. ( <i>Randolph-Macon Woman's Coll.</i> ), <i>Teacher of Mathematics and Science, Edward McGehee College, Woodville, Miss.</i>	Belle Haven, Va.

Seetoo, Fucheng, <i>Student</i> ,	Shanghai, China.
Shaw, Mary Louise, A.B. ( <i>Mt. Holyoke Coll.</i> ), <i>Science Teacher, High School, Palmer</i> ,	Monson.
Shen, Kuan Yuan, <i>Student</i> ,	Cambridge.
Tharaldsen, Conrad Engerud, S.B. ( <i>St. Olaf Coll.</i> ), <i>Teacher of Physics and Chemistry, Blaine High School</i> ,	Superior, Wis.
Tobien, Arthur Patten Davis, A.B. ( <i>Bates Coll.</i> ). <i>Teacher of Mathematics and Science, Rand Collegiate School, Trenton, N. J.</i>	Templeton.
Tucker, Richard Dana, PH.B. ( <i>Brown Univ.</i> ), <i>Master, Episcopal Academy</i> ,	Philadelphia, Pa.
Tucker, Robert Withington, <i>Student</i> ,	Dorchester Centre.
Van Nostrand, Nora A., S.B. ( <i>Syracuse Univ.</i> ), <i>Teacher of Science, Gilmanton Academy</i> ,	Gilmanton, N.H.
Ware, Gertrude May, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher, High School, Webster</i> ,	Hingham.
Wilson, Elizabeth Sophia, A.B. ( <i>Smith Coll.</i> ), <i>Teacher, Brown College Preparatory School, Philadelphia, Pa.</i>	Collingswood, N.J.
Wilson, Harold David, <i>Student</i> ,	Tufts College.

## ADVANCED PHYSICS

Adams, Mark Irving, <i>Student</i> ,	Roxbury.
Adams, Roger, <i>Student</i> ,	Cambridge.
Austin, Florence Evelyn, <i>Teacher</i> ,	Reading.
Dean, Howard Andrew, A.M. ( <i>Park Coll.</i> ), <i>Professor of Chemistry and Physics, Park College</i> ,	Parkville, Mo.
Dolbear, Katherine Ella, <i>Teacher, Mary Institute, St. Louis, Mo.</i>	Tufts College.
Knaggs, Cornelius Francis, <i>Teacher</i> ,	Providence, R.I.
Maurice, Brother, <i>Teacher of Mathematics, Mount St. Joseph's College</i> ,	Baltimore, Md.
Scammon, Richard Everingham, A.M. ( <i>Univ. of Kansas</i> ), <i>Austin Teaching Fellow, Department of Comparative Anatomy, Harvard Medical School</i> ,	Cambridge.
Vanier, Henri Albert, A.B. ( <i>Laval Coll.</i> ), <i>Teacher, St. Joseph's College</i> ,	St. Joseph's College, N. B.
Ziegel, Henry Herman, <i>Student</i> ,	Boston.

## PUBLIC SPEAKING AND READING

## VOICE DEVELOPMENT

Alberta, Sister, <i>Teacher, St. Joseph's Academy,</i>	St. Paul, Minn.
Blue, Kate, <i>Primary Teacher, Public School,</i>	Montgomery, Ala.
Carll, Lydia Adèle, A.B. ( <i>Columbia Univ.</i> ), <i>Teacher,</i> <i>Public School, No. 11, Queen's, New York,</i>	Whitestone, L.I., N.Y.
Dickinson, Metus Troy, <i>Student,</i>	Goldsboro, N.C.
Fantus, Felix, <i>Actor,</i>	Chicago, Ill.
Goldbacher, Nina Veronica, <i>Teacher of English</i> <i>and Elocution, Public School, No. 37,</i>	New York, N.Y.
Mitchell, Hanna Thompson, <i>Vice-Principal, Swarth-</i> <i>more Preparatory School,</i>	Swarthmore, Pa.
Singleton, Clementene, <i>Teacher,</i>	Cocoa, Fla.
Spear, Margaret Vivia, A.B. ( <i>Wellesley Coll.</i> ), <i>Teacher of French and English, High School,</i>	Lowell.
Tenney, Raymond Parker, <i>Student,</i>	Cambridge.
Weston, Arthur James, A.M. ( <i>Yale Univ.</i> ), <i>In-</i> <i>structor in English, Stevens Institute of</i> <i>Technology, Hoboken, N. J.</i>	Scranton, Pa.

## PLATFORM READING

Carll, Lydia Adèle, A.B. ( <i>Columbia Univ.</i> ), <i>Teacher,</i> <i>Public School, No. 11, New York,</i>	Whitestone, L.I., N.Y.
Davis, William Hawley, A.B. ( <i>Harvard Univ.</i> ), A.M. ( <i>Columbia Univ.</i> ), <i>Instructor, Harvard</i> <i>College,</i>	Cambridge.
Dillon, Augustus, A.B. ( <i>Amherst Coll.</i> ), <i>Instructor</i> <i>in Speaking and English, High School, Hobo-</i> <i>ken, N. J.</i>	Cortland, N.Y.
McOrmond, Raymond Richards, A.B. ( <i>Yale Univ.</i> ), <i>Instructor of Mathematics, and Physical Di-</i> <i>rector, Woodberry Forest School, Orange, Va.</i>	Marlboro.
Nelson, William Henry, A.B. ( <i>Harvard Univ.</i> ), <i>Instructor, Harvard College,</i>	Dorchester.
Shirley, Minerva Blodgett (Mrs.), PH.B. ( <i>Boston</i> <i>Univ.</i> ), <i>Teacher, Hitchcock Academy, Brimfield,</i>	Andover, N.H.
Stewart, Gertrude Mary Deane, PH.B. ( <i>Howard</i> <i>Univ.</i> ), <i>Teacher, Agricultural and Industrial</i> <i>School, Dinwiddie, Va.</i>	Charlottesville, Va.
Tressler, Jacob Cloyd, A.B. ( <i>Syracuse Univ.</i> ), <i>Teacher, State Normal and Training School,</i>	Potsdam, N.Y.

Tucker, Frances, A.B. ( <i>Boston Univ.</i> ), <i>Teacher, High School, Quincy,</i>	Arlington.
Vickery, Mattie Alice, <i>Teacher of Elocution, High School,</i>	Nashua, N.H.
Vognild, Selma Marie, PH.B. ( <i>Univ. of Wisconsin</i> ), <i>Teacher of English and Elocution, Fort Atkinson, Wis.</i>	Chicago, Ill.

## PLATFORM SPEAKING

Arnold, Earle Bernon, <i>Student,</i>	No. Scituate, R.I.
Behan, Thomas Charles (Brother Alphonse), <i>Principal, St. Agnes Institute,</i>	Manchester, N.H.
Blackett, Herbert Edmund, B.SC. ( <i>London Univ., England</i> ), <i>Assistant, Harvard College Observatory,</i>	Bath, Eng.
Child, Frederic Anthony, A.B. ( <i>Univ. of Pennsylvania</i> ),	Philadelphia, Pa.
Dickinson, Metus Troy, <i>Student,</i>	Goldsboro, N.C.
Dillon, Augustus, A.B. ( <i>Amherst Coll.</i> ), <i>Instructor in English and Speaking, High School, Hoboken, N.J.</i>	Cortland, N.Y.
Frasquiere, Tranquilino, C.E. ( <i>Madrid</i> ), <i>Engineer,</i>	Havana, Cuba.
Hotchkiss, George Burton, A.M. ( <i>Yale Univ.</i> ), <i>Instructor in English, New York University,</i>	Naugatuck, Conn.
Kennedy, Philip Benjamin, A.B. ( <i>Beloit Coll.</i> ), <i>Instructor in Public Speaking, Beloit College,</i>	Beloit, Wis.
McOrmond, Raymond Richards, A.B. ( <i>Yale Univ.</i> ), <i>Instructor and Physical Director, Woodberry Forest School, Orange, Va.</i>	Marlboro.
Moore, Percy Roberts, A.B. ( <i>Tufts Coll.</i> ), <i>Teacher, Colby Academy, New London, N. H.</i>	Montgomery.
Nelson, William Henry, A.B. ( <i>Harvard Univ.</i> ), <i>Instructor, Harvard College,</i>	Dorchester.
Smith, Ernest Allison, <i>Field-Worker, Connecticut Prohibition Executive Committee,</i>	Waterbury, Conn.
Taylor, Randall Leroy, <i>Principal, High School, Canaan, Me.</i>	Frye, Me.
Tenney, Raymond Parker, <i>Student,</i>	Cambridge.

## READING OF ENGLISH CLASSICS

Alberta, Sister, <i>Teacher, St. Joseph's Academy,</i>	St. Paul, Minn.
Allen, Katharine Myers,	Dorchester.
Begland, Samuel, <i>Principal, Public Schools,</i>	Gnadenhutten, O.



- Brandau, Elvira Genevieve, Cambridge.
- Campbell, Annie Cannon, A.B. (*Wilson Coll.*), *Teacher of English, High School, Altoona, Pa.* Pennsylvania Furnace, Pa.
- Campbell, Cora Edith, *Teacher, Public School, District No. 1, Newton, O.* St. Louisville, O.
- Carll, Lydia Adèle, A.B. (*Columbia Univ.*), *Teacher, Public School, No. 11, New York, N.Y.* Whitestone, L.I., N.Y.
- Clarson, James Willis, Jr., *Principal and Teacher of English, Preparatory Center, No. 52,* Baltimore, Md.
- Cleland, Jane Evangeline, *Teacher, Public Schools,* Pembroke, N.S.
- Davis, William Hawley, A.B. (*Harvard Univ.*), A.M. (*Columbia Univ.*), *Instructor, Harvard College,* Cambridge.
- Dillon, Augustus, A.B. (*Amherst Coll.*), *Instructor in Speaking and English, High School, Hoboken, N.J.* Cortland, N.Y.
- Duclos, Joseph Louis, S.T.B. (*Catholic Univ.*), *Teacher, All Hallows College,* Salt Lake City, Utah.
- Elliott, Marion Porter, *Teacher, Grammar School, Danvers,* W. Medford.
- Hall, Alice, *Teacher of English, Steele High School,* Dayton, O.
- Haskell, Helen Hall, Ipswich.
- Johnson, Charles Bishop, *Student,* Charlestown.
- Kennedy, Philip Benjamin, A.B. (*Beloit Coll.*), *Instructor in Public Speaking, Beloit College,* Beloit, Wis.
- Kieff, Blanche, S.B. (*Valparaiso Univ.*), *Teacher,* Lafayette, Ind.
- Love, Cornelia Spencer, *Student,* Cambridge.
- McKallip, Henry Kipp, *Business Man,* Pittsburg, Pa.
- Mosher, Edith Rose, *Clerk, Forest Service,* Washington, D.C.
- Nelson, William Henry, A.B. (*Harvard Univ.*), *Instructor, Harvard College,* Dorchester.
- Newell, Caroline Seville, *Teacher, Public Schools,* Topeka, Kan.
- North, Elizabeth Smith, M.E. (*W. Chester State Normal School*), *Teacher, Public School,* Lyndell, Pa.
- Norton, Louisa Mabel, A.B. (*Radcliffe Coll.*), *Teacher, High School, Fairhaven,* W. Somerville.
- Reed, Annie Josephine, *Teacher, Everett School,* Boston.
- Roddey, Annie, A.B. (*Monroe Coll.*), *Principal, Pryor Street Public School,* Atlanta, Ga.
- Rowell, Virginia Fay, *Teacher of Elocution, High School, Revere,* Dorchester.
- Ryan, Elizabeth Gertrude, *Teacher of Oral Expression,* Waltham.

Shirley, Minerva Blodgett (Mrs.), PH.B. ( <i>Boston Univ.</i> ), <i>Teacher, Hitchcock Academy, Brimfield,</i>	Andover, N.H.
Tenney, Raymond Parker, <i>Student,</i>	Cambridge.
Tressler, Jacob Cloyd, A.B. ( <i>Syracuse Univ.</i> ), <i>Teacher, State Normal and Training School,</i>	Potsdam, N.Y.
Vognild, Selma Marie, PH.B. ( <i>Univ. of Wisconsin</i> ), <i>Teacher of English and Elocution, Fort Atkinson, Wis.</i>	Chicago, Ill.
Wilz, Stella Regina, <i>Principal, Commercial Department, High School,</i>	Dunmore, Pa.

## ROMANCE LANGUAGES

## INTERMEDIATE FRENCH

Ackley, Mabel Marie, <i>Student,</i>	Rutland, Vt.
Arthur, Eda Margaret, S.B. ( <i>Geneva Coll., Pa.</i> ), <i>Teacher, Oahu College, Honolulu, Hawaii,</i>	Cambridge.
Bickford, Belle Elliott, <i>Teacher of French, High School,</i>	Salt Lake City, Utah.
Fairclough, William Whitney, A.B. ( <i>Bowdoin Coll.</i> ), <i>Student,</i>	Richmond, Me.
Freeman, Ella Josephine, <i>Principal, Private School,</i>	Nyack, N.Y.
Frew, Florence Agnes, A.B. ( <i>Oberlin Coll.</i> ), <i>Teacher, High School,</i>	Rahway, N.J.
Hill, Roy Vernon, A.M. ( <i>Harvard Univ.</i> ), <i>Student,</i>	Fort Dodge, Ia.
Kingman, Frederic William, <i>Superintendent of Schools,</i>	Walpole.
Lo, Pan Hui, <i>Student,</i>	Canton, China.
McCafferty, Monteith Anna, <i>Private Teacher,</i>	Brookline.
Maddocks, Maude Alice, <i>Teacher, Chestnut Hill School, Chestnut Hill,</i>	Foxboro.
Moore, Mary Teresa Veronica, <i>Student,</i>	Roxbury.
Morrison, Frederick Holton, <i>Student,</i>	Newton, N.J.
Ritz, Marie Emilie, <i>Teacher of French, Stuart-Mitchell School,</i>	Pittsburg, Pa.
Silver, James Alpheus, PH.B. ( <i>Mt. Union Coll.</i> ), <i>Student,</i>	Alliance, O.
Yeh, Ta Chien, <i>Student,</i>	Sungkiang, China.

## FRENCH CONVERSATION AND COMPOSITION

Arthur, Eda Margaret, S.B. ( <i>Geneva Coll., Pa.</i> ), <i>Teacher, Oahu College, Honolulu, Hawaii,</i>	Cambridge.
Baldwin, Wilhelmina Augusta, <i>Vocal Music Teacher,</i>	Worcester.

Bickford, Belle Elliott, <i>Teacher of French, High School,</i>	Salt Lake City, Utah.
Cederstrom, Ethel Katharina Grace, A.B. ( <i>Boston Univ.</i> ), <i>Assistant, High School, Northampton,</i>	Roxbury.
Corcoran, Anna Ford,	Cambridge.
Currier, Wilton Lincoln, A.B. ( <i>Harvard Univ.</i> ), <i>Teacher, De Meritte School,</i>	Boston.
Hemsath, William Karl, A.B. ( <i>Washington and Jefferson Coll.</i> ), <i>Instructor in Modern Languages, Thiel College,</i>	Greenville, Pa.
Henry, Brother, <i>Teacher of Latin and Greek, St. John's High School,</i>	Worcester.
Leadbetter, Maud Gertrude, <i>Assistant, High School, E. Boston,</i>	Roslindale.
Lucas, Florence Anne, <i>Teacher, Ames College, Ia.</i>	Sheldonville.
McCafferty, Monteith Anna, <i>Private Teacher,</i>	Brookline.
Norton, Louisa Mabel, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher, High School, Fairhaven,</i>	W. Somerville.
Poele, Prudence Theresa van de,	Lynn.
Ritz, Marie Emilie, <i>Teacher of French, Stuart-Mitchell School,</i>	Pittsburg, Pa.
Simpson, Etta Lillian, S.B. ( <i>New Hampshire Coll.</i> ), <i>Teacher, High School, Dartmouth,</i>	Dorchester.
Somerset, Margaret Faith, A.B. ( <i>West Virginia Univ.</i> ), <i>Teacher of French and Mathematics, High School,</i>	Bridgeport, Conn.

## NINETEENTH CENTURY FRENCH LITERATURE

Farnham, Carrie Evangeline, <i>Teacher of French, Grammar Grades, New Bedford,</i>	Beverly.
Hardon, Frances, A.B. ( <i>Radcliffe Coll.</i> ), <i>Teacher of French,</i>	Cambridge.
Kelley, Edith Abbott, A.B. ( <i>Bates Coll.</i> ), <i>Teacher, High School, Chicopee,</i>	Springfield.
Leadbetter, Maud Gertrude, <i>Assistant, High School, E. Boston,</i>	Roslindale.
Lucas, Florence Anne, <i>Teacher, Ames College, Ames, Ia.</i>	Sheldonville.
Pearson, Aylma Young, <i>Student,</i>	New York, N.Y.
Somerset, Margaret Faith, A.B. ( <i>West Virginia Univ.</i> ), <i>Teacher of French and Mathematics, High School,</i>	Bridgeport, Conn.

## ELEMENTARY SPANISH

Byrne, Helen Lane, <i>Student</i> ,	Roxbury.
Cameron, Ward Griswold, <i>Student</i> ,	Boston.
Poele, Prudence Theresa van de,	Lynn.
Sweeney, John Martin, Jr., <i>Student</i> ,	Naugatuck, Conn.
Vogel, Bertha, <i>Assistant, High School, So. Boston</i> ,	Boston.

## ADVANCED SPANISH

Carman, Albert Benton, A.B. ( <i>Harvard Univ.</i> ), <i>In-</i> <i>structor, United States Revenue Cutter School,</i> <i>Arundel Cove, Md.</i>	East Richland, O.
Hall, Agnes Anderson, <i>Teacher</i> ,	Dayton, O.
Junkins, Madeline, <i>Student</i> ,	Boston.
Richards, Gragg, S.M. ( <i>Harvard Univ.</i> ), <i>Mining</i> <i>and Civil Engineer</i> ,	Placerville, Ida.

## SUMMARY OF REGISTRATION

## ARTS AND SCIENCES:—

Anthropology . . . . .	9
Architecture . . . . .	17
Astronomy . . . . .	3
Botany . . . . .	18
Chemistry . . . . .	56
Education . . . . .	84
English . . . . .	172
Fine Arts . . . . .	62
French . . . . .	39
Geology and Geography . . . . .	12
German . . . . .	39
Government . . . . .	32
Greek . . . . .	42
History . . . . .	48
Latin . . . . .	26
Mathematics . . . . .	43
Mechanics . . . . .	9
Music . . . . .	20
Philosophy . . . . .	36
Physical Education . . . . .	233
Physics . . . . .	41
Psychology . . . . .	31
Public Speaking, Platform Reading, and Voice Training . . . . .	71
Railroad Engineering . . . . .	111
Shopwork . . . . .	156
Spanish . . . . .	9
Surveying . . . . .	128

---

1,547

Deduct for names inserted more than once . . . . . 431

---

1,116

THEOLOGY . . . . . 66

MEDICINE . . . . . 137

DENTISTRY . . . . . 13

---

1,332



## SUGGESTIONS TO STUDENTS

*Office.* — During the session of the Summer School the office is in *Massachusetts Hall*, in the Harvard Yard, at Harvard Square, Cambridge.

*Classes.* — Instructors will meet their classes at 3 or 4 P.M. on Wednesday, July 7, for consultations, announcements, and for the introductory lecture, in rooms to be designated on the bulletin boards. Every student is advised to reach Cambridge before 12 M. on the opening day, so as to be able to register at the office of the Summer School and to attend the first class meeting.

*Boston and Cambridge.* — Practically all passengers for Cambridge, whether by steamer or by rail, must purchase tickets and get baggage checked to one of the railway stations named below in Boston, whence they can proceed to Harvard Square, Cambridge, by electric trolley-car or by cab.

*Boston Railway Stations.* — Passengers reaching Boston over the lines of the *Boston and Maine railway* arrive at the *North Station*. Passengers arriving in Boston over the lines of the *Boston and Albany railway* may get off either at the *Huntington Avenue Station* or at the *South Station*; and those over the lines of the *New York, New Haven and Hartford railway* (except those over the Plymouth Division and some of the lines of the Midland Division, which go to the South Station only) may get off either at the *Back Bay Station* or at the *South Station*. The Huntington Avenue and the Back Bay Stations are placed more conveniently than the South Station for passengers to Cambridge. Passengers arriving in Boston by the *Fall River Boat train* may get off either at the *Back Bay* or at the *South Station*.

*North Station to Cambridge.* — Passengers arriving at the North Station may take the trolley car for Harvard Square in front of the Station.

*South Station to Cambridge.* — A trolley car for Harvard Square passes this Station at intervals of about seven minutes.

*Huntington Avenue and Back Bay Stations to Cambridge.* — Passengers who get off at the Huntington Avenue or at the Back Bay

Station may walk through Dartmouth Street to Copley Square, and there take an outward-bound trolley car for Harvard Square at the New Old South Church.

*Wharves to Cambridge.*— Passengers reaching Boston by steamer from Savannah, Norfolk, Baltimore, Philadelphia, Maine, or the Provinces, will land at one of the wharves along Atlantic Avenue in Boston; and are advised to take *a north-bound elevated train on Atlantic Avenue for North Station* and transfer at North Station to any trolley car for Harvard Square, obtaining a transfer check on the elevated platform.

*Baggage Transfer to Cambridge.*— Passengers will ordinarily find on the train an agent of the Armstrong Transfer Company, with whom arrangements may be made to deliver baggage in Cambridge. This plan should be used, however, only when the Cambridge address has been fixed in advance.

When the student has no Cambridge address engaged it will be best for the student to retain the trunk check until he reaches Cambridge and selects lodgings. Several reliable local express companies (Anderson's, Sawin's, etc.), having offices at Harvard Square, make prompt deliveries in Cambridge, at least twice a day. Baggage may be left in the Boston stations, and no storage is charged if removed within 24 hours after arrival.

---

Further information will be furnished on application to the Chairman of the Summer School, Professor James Lee LOVE, 4 Lawrence Hall (Massachusetts Hall after July 1), Cambridge, Mass.

## LIST OF BOARDING AND LODGING HOUSES

Prices named are per week unless otherwise indicated. Rooms and suites are furnished. The price includes light and the ordinary care of the room. Some of the single rooms, and many of the suites, may be occupied by two persons. The accommodations for both board and rooms are ample. Arrangements can be made after reaching Cambridge. If the student prefers to engage accommodations in advance, by correspondence, any names on the following list may be addressed; but such engagement should be provisional, as a rule, and subject to approval after the accommodations are viewed. Students are advised to have a clear understanding with the landlord as to terms and the length of time for which accommodations are engaged. It is ordinarily understood that rooms or board are taken for the entire six weeks of the Summer School, ending August 18. In case a shorter time is desired, for any reason, the contract should be explicit on this point; otherwise, if the student wishes to make a change, or to leave Cambridge before August 18, difficulties may arise in giving up the accommodations first engaged. The Chairman of the Summer School may be consulted about locations, etc. No rooms are available in the College dormitories.

### BOARD AND ROOMS

STREET	NAME	SINGLE ROOMS		SUITES		PRICES OF TABLE BOARD	NUMBER OF TABLE BOARDERS ACCOMMODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites		
18 Appian Way	Mrs. E. J. Pinkham	—	—	—	—	\$7.00	10
117 Avon Hill St.	Mrs. E. D. Fellows	3	\$3.00	—	—	8.00	—
56 Boylston St.	Miss B. Kaatz	4	2.00-4.00	—	—	4.00	8
48 Brattle St.	Mrs. G. W. Patten	2	3.00	3	\$4.00	5.00	10
62 " "	Mrs. S. E. Clifford	5	3.00-7.00	1	8.00	7.00	50

400 Broadway	Mr. H. E. Lombard	10	2.50-3.00	—	—	6.00	25
1588 Cambridge St.	Mrs. M. Millner	1	1.25	—	—	4.50	15
1640 “	Mrs. K. M. James	—	—	5	5.00-10.00	5.00-6.00	20
1683 “	Mrs. H. T. Welsh	7	1.50-3.00	2	3.50-4.50	5.00	20
1689 “	Mrs. C. Crawford	4	2.00-3.00	1	5.00	5.00	20
1707 “	Mrs. T. F. O'Neil	7	1.00-2.50	1	3.00	5.00	12
1709 “	Mrs. J. W. Ousler	3	1.00-2.50	2	2.50-3.50	5.00	20
1750 “	Mrs. J. B. Carter	12	1.50-3.00	5	3.00-5.00	5.00	15
73A Dana St.	Alice L. Carpenter	2	2.00-2.50	—	—	4.00	6
12-14A Eliot St.	Mrs. M. J. Packard	10	1.50-2.50	4	5.00-7.00	3.50	50
15 Everett St.	Mrs. E. G. Perry	5	3.00-7.00	1	12.00	10.00-12.00	12
11 Felton St.	Mrs. G. S. Davidson	4	—	—	—	4.50	20
1 Forest Park	Mrs. E. W. Raddin	5	2.00-3.00	2	—	5.00	15
42 Garden St.	Miss E. I. Odiorne	5	—	1	13.00	6.00	10
65 Hammond St.	Mrs. L. M. Johnson	7	1.50-2.50	4	3.00-5.00	5.00	—
74 “	Mrs. A. E. Nichols	4	2.50-3.50	1	4.00	5.00	50
105 “	Mrs. J. A. Crichton	2	2.00	—	—	5.00	4
360 Harvard St.	Mrs. G. H. Hamilton	15	1.50-5.00	2	5.00	5.00	35
373 “	Miss M. Moulton	5	1.50-4.00	—	—	5.00	25
391 “	Mrs. S. L. Peaslee	5	2.00	2	—	5.00	40
17 Hilliard St.	Mrs. W. A. Mower	2	1.50-3.00	1	4.50	5.00	6
47 Irving St.	Mrs. A. E. Flint	2	3.50	1	7.00	7.00	—
58 Kirkland St.	Mrs. F. A. Black	2	2.00-3.00	1	5.00	5.00	8
64 “	Mrs. A. P. Hamlin	7	2.00-4.00	1	4.00	5.00	10
68 “	Mrs. F. N. Bardwell	5	2.50-5.00	—	—	5.00	8
37 Langdon St.	Mrs. F. Gaskill	4	3.00	5	—	5.50	30
5 Lee St.	Mrs. Rose Sheridan	6	1.50-5.00	—	—	4.00	15
17 “	Mrs. E. E. Collins	4	2.00-4.00	1	5.00	4.00-4.50	30
25 “	Mrs. John Murray	—	—	—	—	4.00	—
1033 Massachusetts Ave.	Mrs. J. J. Connell	5	2.00-4.00	1	6.50	5.00	20
30 Mellen St.	Miss E. W. Folsom	4	1.50-2.50	—	—	4.50	6
28 Mt. Auburn St.	Mrs. Julia Sugrue	6	2.00-2.50	3	5.00	6.00	14

STREET	NAME	SINGLE ROOMS		SUITES		PRICES OF TABLE BOARD	NUMBER OF TABLE BOARDERS ACCOM- MODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites		
90 Mt. Auburn St.	Mr. T. J. Griffin	—	—	—	—	\$5.00	75
16 Oxford St.	Mr. S. P. Hutchins	2	\$2.00	9	\$5.00	5.00	75
18 Prescott St.	Mrs. N. E. Jones	3	3.00	—	—	5.50	—
10-12 Remington St.	Mrs. E. S. Evans	5	2.00-5.00	2	8.00-10.00	5.50	35
11 Shepard St.	Mrs. A. J. Brown	5	1.00-3.00	—	—	5.50	12
32 “	Mrs. J. F. Alderman	2	2.50-3.00	—	—	5.25	5
4 Story St.	Miss Grace Clark	4	1.50-5.00	1	5.00	5.00	15
18 Trowbridge St.	Mrs. A. Stokes	1	1.75	3	3.00-6.00	5.00	8
20-22 “	Mrs. E. J. Angell	6	1.25-5.00	1	7.00	5.00	25
35 “	Miss Bertha Wilson	4	3.00	2	6.00	5.00	10
17 Wendell St.	Mrs. J. D. Hunt	3	1.50-2.50	—	—	5.00	15

*At many of the above named places arrangements can be made for single meals at the following prices : —*

1. For breakfasts, 20 cents to 35 cents each, or \$1.30 to \$2.10 per week.
2. For luncheons, 20 cents to 35 cents each, or \$1.30 to \$2.10 per week.
3. For dinners, 30 cents to 60 cents each, or \$2.00 to \$3.50 per week.

Table board may be obtained *à la carte* at the several cafés and restaurants at Harvard Square, near the College grounds, where hundreds may be accommodated.



## ROOMS WITH BREAKFASTS OR LUNCHEONS

STREET	NAME	SINGLE ROOMS		SUITES		PRICES OF SINGLE MEALS	PRICES BY THE WEEK FOR ONE MEAL A DAY
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites		
82 Dana St.	Mrs. C. Crowley	2	\$3.00	—	—	—	\$1.50
21 Ellery St.	Misses Brigham	2	2.00-3.00	—	—	—	—
30 Forest St.	Mrs. E. R. Reed	3	2.00-3.00	1	\$5.00	25 cts.	—
54 Garden St.	Misses Parsons	4	1.00-4.00	1	3.50-4.00	25	—
162 Hancock St.	Mrs. G. S. Boyer	4	2.00-4.00	—	—	—	reasonable
357 Harvard St.	Mrs. N. F. Walsh	10	2.00-5.00	4	3.50-6.00	35	—
46 Langdon St.	Mrs. A. Peppette	4	1.50-4.00	—	—	25	—
1 Leonard Ave.	Mrs. J. D. Fitzgerald	2	1.50-1.75	—	—	25	—
26 Mellen St.	Mrs. C. W. Green	1	1.50	—	—	25	—
46 Mt. Auburn St.	Mrs. Martin Brennan	3	1.00-1.50	2	2.00-2.50	35	—
106 Oxford St.	Mrs. H. L. Brodhead	1	2.50	2	3.00	—	—
8 Shepard St.	Mrs. L. L. C. Billings	3	1.50-2.00	—	—	—	1.75

## ROOMS ONLY

STREET	NAME	SINGLE ROOMS		SUITES		NUMBER OF LODGERS ACCOMMODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites	
16 Ash St.	Miss C. J. Carroll	3	\$1.50-4.00	2	\$3.00-6.00	5
32 " "	Mrs. L. M. Tozier	3	1.50-3.00	—	—	—
3 Avon St.	Mrs. G. D. Wildes	1	3.00	—	—	2
8 " "	Mrs. John Cotter	3	2.00-4.00	—	—	5
13 " "	Mrs. T. W. Paine	2	2.50-3.00	—	—	—
42 Bowdoin St.	Mrs. E. L. Wilson	3	1.75-3.00	—	—	—
44 Brattle St.	Mrs. L. J. Willey	1	3.00	4	5.00	—
61 " "	Mr. Roger Sherman	3	1.50-3.00	2	4.50-5.00	4
409 Broadway	Mrs. Catherine Holy	2	1.50	—	—	2
417 " "	Mrs. J. L. Fox	3	1.25-2.50	—	—	—
419 " "	Mrs. C. P. Fox	5	1.25-3.00	1	5.50	—
432 " "	Mrs. H. C. Mason	2	2.00-3.00	—	—	—
467 " "	Mrs. John Tyler	4	2.00	2	3.00-4.00	—
471 " "	Mrs. S. E. Allyn	4	2.00-4.00	—	—	—
472 " "	Mrs. E. J. Hooper	—	—	1	7.00-8.00	—
1686 Cambridge St.	Mrs. I. R. Snow	2	2.00-2.50	2	3.00-3.50	4
1716 " "	Mrs. F. C. Becker	2	2.50-3.00	3	3.00-4.00	—
1727 " "	Mrs. W. H. Taunton	16	1.50-4.00	8	2.50-6.00	—
1734 " "	Mrs. E. F. Hickey	2	2.00-2.50	4	3.00-4.00	9
15 Chauncey St.	Miss C. H. Smith	5	2.00-4.00	—	—	5
10 Concord Ave.	Mrs. S. A. Pratt	3	5.00-6.00	—	—	3
36 Dana St.	Mrs. E. D. Mason	3	2.00-4.00	1	5.00	—
46 " "	Mrs. O. V. Litchfield	2	2.50-3.00	1	4.00	4
9 DeWolf St.	Miss E. J. D. Kennard	3	2.00	1	3.75	—

8 Ellery St.	Mrs. E. B. O'Brien	4	1.75-4.00	2	5.00	—
18 " "	Mrs. M. E. Pierce	2	2.00-2.50	—	—	—
18 Ellsworth Ave.	Mrs. L. B. Edwards	2	3.00	—	—	4
19 " "	Mrs. D. L. Watson	4	1.25-3.00	—	—	—
29 Everett St.	Mrs. A. Lesley	4	2.00-3.00	—	—	4
31 " "	Mrs. J. Culhane	4	2.00-4.00	—	3.00-5.00	6
10 Farwell Place.	Mrs. W. S. Randall	3	1.50-2.00	2	—	3
22 " "	Mrs. J. C. Telfer	2	3.00	—	—	—
6 Felton St.	Mr. A. A. Buckland	5	1.50-3.00	1	3.00	5
9 " "	Mrs. W. A. Little	3	2.50-3.00	—	—	—
1 Garden St.	Mrs. M. F. Pinkham	7	—	4	10.00	—
61 Gorham St.	Mrs. H. F. Linnell	4	2.00-3.00	—	—	—
63 " "	Mrs. M. A. Eagan	5	1.25-2.50	2	4.00-5.00	5
111 Hammond St.	Mrs. David Eccles	2	2.00-2.50	—	—	3
*308 Harvard St.	Miss M. J. Gaffney	3	1.50-3.00	—	—	4
366 " "	Mrs. M. E. Huse	5	1.50-5.00	—	—	—
378 " "	Miss M. L. Bullard	4	2.50-4.00	—	—	4
379 " "	Mrs. W. Ivers	3	2.00-3.50	—	—	—
381 " "	Mrs. J. Dobinson	2	2.00-3.00	2	4.00-5.00	—
40 Hawthorn St.	Mrs. H. P. Huckins	3	2.50-3.50	2	5.00-8.00	6
48 Highland Ave.	Mrs. Albert Babbitt	2	1.50-2.00	—	—	4
5 Hilliard Place	Mrs. J. D. Rose	2	1.50	—	—	—
15 Hilliard St.	Mrs. L. F. West	2	2.50-3.00	—	—	4
13 Howland St.	Mrs. William Rose	4	2.00-2.50	—	—	—
33½ Inman St.	Mrs. J. F. Davis	3	1.00-2.50	1	8.00	8
24 Irving St.	Mrs. C. N. Gardner	4	3.00-4.00	1	7.00	—
48 " "	Mrs. E. F. Morse	4	2.00-2.50	1	—	—
40 Kirkland St.	Mrs. W. A. Brewster	4	1.50-3.00	7	1.50-5.00	20
42 " "	Miss J. E. Brewster	11	1.50-3.00	4	3.00-6.00	19
15 Langdon St.	Mrs. H. P. Massure	3	2.00-3.00	2	5.00-6.00	9
24 " "	Mrs. C. L. Whittle	1	3.00	—	—	2
51 " "	Mrs. C. L. Robinson	4	2.00-3.00	—	—	—

STREET	NAME	SINGLE ROOMS		SUITES		NUMBER OF LODGERS ACCOMMODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites	
5-7 Linden St.	Miss M. E. Mooney	15	\$3.00-5.00	5	\$5.00-8.00	20
Marie Ave.	Mrs. E. T. McNamara	1	2.50	—	—	—
43 Martin St.	Mrs. C. F. Willard	4	3.00-4.00	1	5.00	—
770 Massachusetts Ave.	Mrs. J. T. Wyman	3	3.50-4.00	—	—	5
*1132	Miss H. F. Shea	5	1.50-2.00	2	2.50-3.00	8
1134	Miss C. M. Burns	6	1.00-2.50	3	2.00-3.00	—
1593	Miss N. M. Colby	1	3.00	—	—	—
1599	Mrs. E. S. Spyree	5	1.00-4.00	3	3.00-6.00	—
1626	Mrs. E. J. Cooley	6	2.50-5.00	2	8.00	6
1680	Mrs. A. M. Ackers	3	2.50-4.00	—	—	—
13 Mellen St.	Mrs. F. G. Ailnutt	1	2.50	1	3.00	—
15	Mrs. M. J. Butler	2	2.00	2	—	—
18	Miss J. D. Ferris	8	1.00-3.50	—	—	12
*19	Mrs. A. Champagne	1	3.00	—	—	2
23	Mrs. M. Driscoll	8	1.50-2.50	3	3.00-5.00	—
28	Mrs. G. E. Farmer	4	2.00-3.00	2	4.00-5.00	10
29	Mrs. W. P. Husband	3	2.00	1	2.50	—
34	Mrs. A. M. Whitmore	7	1.50-2.50	—	—	—
37	Mrs. M. A. Peters	6	1.25-4.00	—	3.50-7.00	—
22 Mt. Auburn St.	Miss W. Quinn	3	1.50-2.00	3	3.00	—
36	Mrs. P. H. Concannon	2	1.25	2	2.50	—
44	Mrs. K. M. Powell	2	1.50	3	2.00	—
51	Mrs. Annie Forshner	4	2.00-3.00	—	—	6
84	Miss Isabella Rushton	2	1.50-2.00	—	—	—
127	Mrs. F. M. Patton	3	2.00-5.00	—	—	—
*25 Mt. Pleasant St.	Mrs. C. F. O'Brien	2	1.50-2.50	—	—	—
10 Oxford St.	Mrs. M. D. Fairbank	6	3.00	4	4.00	—

12 Oxford St.	Mrs. S. E. Bosworth	4	2.00-3.50	5	4.50-6.00	14
14 " "	Mrs. L. E. Mitchell	4	4.00	4	4.00	—
45 " "	Mrs. J. W. Irwin	5	2.50-4.50	2	5.00	10
63 " "	Miss M. A. Hutchison	4	1.50-3.00	1	4.00	6
67 " "	Mrs. H. Graham	5	1.00-2.50	1	3.00	—
79 " "	Mrs. W. Clark	3	1.50-2.50	—	—	—
124 " "	Mrs. F. A. Bates	—	—	1	30.00	—
94 Prescott St.	Mrs. G. P. O'Brien	3	1.50-2.50	3	3.50-5.00	8
96 " "	Mrs. C. A. Row	9	1.50-4.00	1	4.50	—
*9 Remington St.	Mrs. H. M. Blake	2	3.00	—	—	—
30 Sacramento St.	Mrs. D. Breeze	3	1.75-2.50	2	4.00-5.00	8
58 " "	Mrs. W. J. Ricker	1	1.50	—	—	—
59 " "	Miss S. Myrta Abbott	—	—	1	8.50	—
13 Shepard St.	Miss N. M. Sheehan	3	2.00-3.00	1	4.00	7
20 " "	Mrs. L. Shackford	2	2.00-2.25	—	—	—
6 Story St.	Mrs. W. Heffernan	4	2.00	2	3.50-6.00	7
8 " "	Mrs. M. H. Cleary	1	2.50	1	3.00	—
12 " "	Mrs. J. Murphy	3	3.00-4.00	1	5.00	4
3 Sumner Road	Mrs. W. H. Taunton	18	2.75-4.00	3	6.50	—
5 " "	" " "	6	1.25-2.50	1	3.50	—
7 " "	" " "	3	1.75-2.50	4	2.50-5.00	—
*11 " "	Miss L. E. Ilsley	2	3.00	—	—	3
12 " "	Mrs. W. P. Adams	3	3.00	1	4.00	8
14 " "	Mrs. M. W. Williams	3	1.50-2.50	1	3.50	5
15 " "	Mrs. M. W. Mason	2	1.50-3.00	—	—	—
33 Trowbridge St.	Mrs. E. B. Eddy	3	2.50-3.50	—	—	8
45 " "	Mrs. J. P. Harwood	3	2.50	1	3.00	—
53 " "	Mrs. J. E. Turner	1	3.00	1	5.00	—
101 " "	Mrs. B. Vinnicombe	3	2.50-4.00	—	—	3
230 Upland Road	Mrs. E. Osterlind	2	2.00	—	—	—
77 Walker St.	Mrs. E. W. Seeger	2	2.50	—	—	2
22 Wendell St.	Mrs. E. M. Marshall	3	1.50-3.00	1	4.00	—



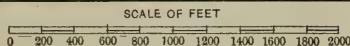
STREET	NAME	SINGLE ROOMS		SUITES		NUMBER OF LODGERS ACCOM- MODATED
		No. of rooms	Prices of single rooms	No. of suites	Prices of suites	
*23½ Wendell St.	Mrs. A. Elder	3	\$1.25-2.00	—	—	6
42 “	Mrs. A. J. Nute	2	2.00-3.00	2	\$3.00	—
49 “	Mrs. B. F. Maricle	5	1.25-3.00	—	—	8
51 “	Mrs. M. P. Purcell	5	2.00-3.00	—	3.00-4.00	—

\* Arrangements can be made for single meals.

### FURNISHED HOUSES AND APARTMENTS

STREET	NAME	NO. OF ROOMS	PRICE PER MONTH	PRICE PER SEASON
1663 Cambridge St.	Mrs. L. R. Brown	6	\$50	—
4 Carver St.	Mrs. W. H. Rice	6	40	—
82 Dana St.	Mrs. C. Crowley	Furnished house	100	—
65 Frost St.	Mr. Frank Lynes	Furnished house	50	—
276 Harvard St.	Miss Josephine Day	4	—	\$50
1105 Massachusetts Ave.	Mrs. G. R. Southwick	3	30-40	—
16 Mellen St.	Mrs. G. G. Edwards	10	—	120, July and Aug.
30½ “	Mr. R. M. Yerkes	Furnished house	30-40	—
115 Mt. Auburn St.	Miss T. F. Mahoney	3	28	—
49 Oxford St.	Mrs. E. H. Thompson	7	—	60
19 Prentiss St.	L. E. White	3	25	—
167 Upland Road	Mrs. J. P. Stearns	Furnished house	50*	—
5 W. Bellevue Ave.	Mr. C. E. Boyd	Furnished house	80	—
29 Wendell St.	Mrs. C. D. Mayer	6	—	55

120, July and Aug.



PETERS ENGRS., BOSTON

HARVARD UNIVERSITY: DEPARTMENTS IN CAMBRIDGE



# **DIVINITY SCHOOL OF HARVARD UNIVERSITY**

## **SUMMER SCHOOL OF THEOLOGY**

---

The eleventh session of the Summer School will open on Wednesday, July 7, 1909, and continue till July 22. The subject will be

### **PRESENT RELIGIOUS CONDITIONS AND PROSPECTS**

---

For circulars and further information, address the Dean of the Harvard Divinity Faculty, Divinity Library, Cambridge, Massachusetts

---

---

# **MEDICAL SCHOOL OF HARVARD UNIVERSITY**

## **SUMMER COURSES IN MEDICINE**

**JUNE 1 to SEPTEMBER 30, 1909**

---

Courses are given during the four months, June 1 to September 30, but chiefly during July and August

---

For catalogue giving full details in regard to courses, and for other information, address the

*Director of Harvard Summer School of Medicine  
Harvard Medical School, Boston, Mass.*

For information concerning courses, academic credit, board, rooms, expenses, reduced railway fares, or any other topic relating to the Summer Courses in Arts and Sciences, and for copies of this Announcement, address the Chairman of the Summer School,

Professor James Lee Love, 4 Lawrence Hall, Cambridge, Mass.

---

*SEE REDUCED RAILWAY FARES, PAGE 24.*



C  
H26u25

1910

# OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOLUME VII

APRIL 5, 1910

NUMBER 8

## BRIEF ANNOUNCEMENT

### SUMMER SCHOOL OF ARTS AND SCIENCES

JULY 9 — AUGUST 18, 1910



Published by Harvard University  
CAMBRIDGE, MASS.

## SUMMER SCHOOL OF ARTS AND SCIENCES

A pamphlet containing further information, with a detailed description of each course, will be issued in April, and will be sent on application.

The Dean will be grateful to any one who will send him the addresses of teachers and others who may be interested to receive information about the Summer Courses.

Address: Professor James H. Ropes, Dean,  
University Hall,  
Cambridge, Mass.

## HARVARD UNIVERSITY

### SUMMER SCHOOL OF ARTS AND SCIENCES

---

Session. — Saturday, July 9, to Thursday, August 18, 1910.

Registration. — On or before *Friday, July 8*, at the office of the Summer School in Massachusetts Hall.

Office hours: July 5-7 . . . . 8.30 A.M.— 5 P.M.

July 8-9 . . . . 8 A.M.—10 P.M.

After July 10 . 8.30 A.M.— 4 P.M.

All courses will begin promptly on July 9.

Women as well as men are admitted to all courses except those in Geology and Geography, and in Engineering.

#### Courses of Instruction.

##### 1. *For Teachers.*

Courses covering the following subjects accepted for admission to Harvard College: —

English.	Trigonometry.
Latin.	Music.
German.	Physics.
French.	Chemistry.
Ancient History.	Astronomy.
Modern History.	Botany.
Advanced Algebra.	Civil Government.
Geometry.	Engineers' Shopwork.

##### Courses in Education.

Normal courses in Physical Education (special pamphlet on application to Dr. Dudley A. Sargent, Cambridge, Mass.).

##### 2. *For Graduate and Other Advanced Students.* — Opportunities for advanced study and research in

Botany.	American History.
Chemistry.	Historical Bibliography.
Education.	Mathematics.
Geology and Physiography.	Philosophy.
Ancient History.	Physics.
Mediaeval History.	Psychology.
Modern European and Asiatic History.	

3. *For Teachers, School Officers, Students, Scientific Workers, Artists and Designers, Journalists, Writers, etc.* — Courses in all the above named subjects, and in

Greek for Beginners.

Fine Arts.

Public Speaking.

Surveying.

Economics.

Sociology.

**Class Hours.** — A minimum of thirty hours of class-room work in each course, usually in the forenoon; in many courses from forty to sixty hours. The courses require from two to five hours of work a day, outside of the class-room periods. There are usually no required exercises on Saturdays.

**Admission.** — No entrance examination for any of the courses. The Instructors may, and in many cases should, be consulted beforehand about requisite preparation or preliminary reading. Their addresses are given below.

In the courses in research and the other courses for graduate and advanced students, only competent students, and in limited number, will be accepted. For admission to any such course the Instructor's permission must be secured in advance.

**Plan of Work.** — The courses are in general arranged with the expectation that a student will concentrate his work on one course, and students are urgently advised not to undertake the work in more than one course. The right to attend other lectures, as Auditors, without sharing in the special class exercises, is open to registered students on payment of an additional fee of \$10.00.

The following courses can be profitably taken in conjunction with another course: —

French S 2 (French Conversation), with French S 1.

German S 2 (German Conversation), with another course in German.

Psychology S 1, with Psychology S 2.

Public Speaking S 9 (Practice in Oral Reading), with a course in English or other subject.

Public Speaking S 12 (Fifteen Readings).

Any two courses in Public Speaking and Reading can be taken together.

In Physical Education a course in Theory and a course in Practice are advantageously taken together.

In Engineering certain courses are arranged so that two or more can be taken in the same summer, see pp. 21-22.

**Certificates and Credit for Degrees.** — The Summer School Certificate, stating that examinations and other tests of the same grade as those required in corresponding courses in Harvard College have been fulfilled, is given for each course satisfactorily com-

pleted. In Physical Education a special certificate is awarded to those who complete satisfactorily the four years' course.

Most of the courses in the Summer School are accepted, subject to the established regulations, to count as half-courses for the degrees of *Bachelor of Arts* and *Bachelor of Science*.

With the previous approval of the proper authorities, advanced work in the Summer School can be counted as part of a programme of work for the degree of Master of Arts, but for that, as for the degree of A.B. or S.B., continuous residence at the University of at least one academic year is required.

The Summer School Certificate is usually accepted for the promotion of teachers, and for exemption from certain of the examinations required for licenses to teach, in localities where examinations are held for these purposes. Teachers desiring to take Summer Courses with such ends in view are advised to inquire beforehand of the School Authorities at the place where they intend to offer the work, as to what credit will be allowed for it.

**Libraries and Laboratories.** — Libraries and Museums of the University are open in the summer, including the University Library and Reading-room, the special working-library in Harvard Hall, the library of school and college text-books in Lawrence Hall, the Fogg Art Museum, the Germanic Museum, the Semitic Museum, the Museum of Natural History, and the Peabody Museum of Archaeology and Ethnology. The library of Radcliffe College provides an attractive working-place for the women of the Summer School. In Boston the Boston Public Library and the Museum of Fine Arts (open daily, including Sunday, and now fully arranged in its new building) are accessible to students without charge.

The University Laboratories of Chemistry, Physics, Botany, Astronomy, and Psychology are used for the courses in those subjects.

**Morning Prayers.** — Morning Prayers, conducted by clergymen of various denominations, are held daily at 8.45 A.M. in Appleton Chapel.

**Free Lectures, Readings, Music, etc.** — A course of weekly lectures and readings by Mr. C. T. Copeland will be given for the students in the Summer School, and other special lectures will be provided, as well as weekly evening organ-recitals in Appleton Chapel. Two or more dramatic performances of classic plays will be given either out-of-doors or in Sanders Theatre.

**Historical Excursions.** — A series of excursions to places of historical interest, including Old Boston, Bunker Hill, Lexington, Concord, Marblehead, Amesbury, Danvers, Salem, and Plymouth, will be arranged under experienced guidance for Wednesday afternoons and Saturdays. In Cambridge itself are many sites of historical and literary interest.



**Recreation.** — Phillips Brooks House, with parlors and a writing-room, will be open for social purposes for both men and women, and Agassiz House (at Radcliffe College) for women in the Summer School. The University tennis-courts are kept in order through the summer, and at one of the University boat-houses boats for rowing on the Charles River can be hired by members of the Summer School. The electric-car lines radiating from Boston and Cambridge, and the steamboats of Boston Harbor, offer abundant opportunities for afternoon and Saturday excursions to parks, hills, woods, lakes, and the beaches and rocks of the neighboring sea-shore. Sea-bathing can be had at many points within easy reach. Private swimming-lessons from competent instructors in the pool of the Sargent Gymnasium can be arranged for at a small fee.

**Climate.** — The climate of Cambridge during the period of the Summer School is agreeable, and is suitable both for study and for out-of-door recreation. Owing to the location of the city near the ocean, the prolonged hot spells which are characteristic of the districts farther inland are here frequently relieved by cool easterly winds from over the water.

**National Education Association.** — The Forty-eighth Annual Convention of the National Education Association will be held in Boston, July 2-8, 1910. For information about the sessions apply to Dr. Irwin Shepard, Winona, Minnesota.

**Fees.** — The tuition-fee for a course varies from \$20 to \$30. In addition a registration fee of \$2 is required of every student.

An Auditor's ticket may be obtained, on the additional payment of \$10, by any registered student who has paid the full fee in one course. It will admit to the lectures only (not to laboratory or other special work) in any other courses, with the exception of Psychology S2, the courses in Physical Education, and those in Public Speaking and Reading.

**Cost of Living.** — Comfortable furnished rooms within a half-mile of the University are offered for rent in great abundance at prices ranging from \$1 to \$4 per week for a single room, and \$2.50 to \$7 per week for a suite of rooms, including care of room, light, and the use of a bathroom. Many of the single rooms and suites are suitable for two persons. Complete apartments (furnished) can be hired at reasonable rates by those who wish to undertake light housekeeping.

Table board can be had in private boarding-houses or in public restaurants, at prices which will range from \$4 to \$8 per week. A lunch-room for women will be maintained at Radcliffe College.

A list of lodgings and boarding-houses will be sent on application to the Secretary of the Summer School, University Hall, Cambridge,

Mass., but it will usually be found more satisfactory to engage board and rooms after arrival in Cambridge.

The average necessary expenses in Cambridge, for the six weeks of the Summer School, not including travelling expenses, may be estimated at \$80-\$90, but with great economy a smaller amount (not less than \$70) can be made to suffice.

**Railroad Rates.** — Reduced railroad rates of one fare and three-fifths for the round trip will be available for students coming to the Summer School from most points in Eastern Canada, New England, New York State, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, western Virginia, and West Virginia. The special rates for the Convention of the National Education Association will also be available for students attending the Harvard Summer School.

Further information about reduced railroad rates will be sent on request.

**Summer School Association.** — The Harvard Summer School Association, comprising all Summer School students and officers, past and present, has been organized "to promote the interests and welfare of the Harvard Summer School and of its members." The annual meeting will be held on Monday evening, July 11, 1910. The Secretary is Mr. W. Stanwood Field, 76 Hutchings St., Roxbury, Mass.

**Attendance in 1909.** The total enrolment of the Summer School in 1909 was 933 persons, of whom 47 per cent were men and 53 per cent women. 61 per cent of the whole number were teachers and school officers; 43 per cent were holders of college degrees; 12 per cent were undergraduates in Harvard or Radcliffe College. The residence of the students was as follows: —

New England States . . . . .	52 per cent
Middle States . . . . .	18 " "
Southern States . . . . .	14 " "
Lake States . . . . .	11 " "
Western States . . . . .	3 " "
Foreign Countries . . . . .	4 " "

#### Other Summer Courses of Harvard University.

For information about

The Harvard Summer School of

Theology . . . . . July 6-21, 1910.

The Harvard Summer School of

Medicine . . . . . June 1-Oct. 1, 1910.

apply to the PUBLICATION AGENT,

2 University Hall,

Cambridge, Mass.

OFFICERS OF THE  
SUMMER SCHOOL OF ARTS AND SCIENCES  
1910

---

President

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D.

Administrative Board

JAMES HARDY ROPES, A.B., D.D., *Bussey Professor of New Testament Criticism and Interpretation*, and *Dexter Lecturer on Biblical Literature*, DEAN.

JOSIAH ROYCE, Ph.D., LL.D., *Professor of the History of Philosophy*.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and Art of Teaching*.

ALBERT BUSHNELL HART, Ph.D., LL.D., Litt.D., *Professor of History*.

CLIFFORD HERSCHEL MOORE, Ph.D., *Professor of Latin*.

WINTHROP JOHN VANLEUVEN OSTERHOUT, Ph.D., *Assistant Professor of Botany*.

HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineering*, and *Director of the Engineering Camp*.

WILLIAM BENNETT MUNRO, Ph.D., LL.B., *Assistant Professor of Government*.

Secretary

GERALDINE S. PROUTY, A.B.

Office of Summer School

Until July 1, 1910, 31 University Hall, Cambridge.

During the Session, Massachusetts Hall, Cambridge.

Instructors

WILLIAM MORRIS DAVIS, M.E., S.D., Ph.D., *Sturgis-Hooper Professor of Geology*, 17 Francis Ave.

DUDLEY ALLEN SARGENT, A.M., M.D., S.D., *Director of the Hemenway Gymnasium*, 27 Everett St.

ALPHONSE BRUN, S.B., A.M., *Instructor in French*, 1218 Mass. Ave.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and Art of Teaching*, 2 Berkeley St.

- JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography and Mineralogy, and Curator of the Mineralogical Museum,* 300 Hammond St., Chestnut Hill.
- CHARLES TOWNSEND COPELAND, A.B., *Instructor in English and Lecturer on English Literature,* Hollis 15.
- EDWARD RUSSELL MARKHAM, *Instructor in Shopwork,* 52 Lee St.
- WILLIAM FOGG OSGOOD, Ph.D., LL.D., *Professor of Mathematics,* 74 Avon Hill St.
- WALLACE CLEMENT SABINE, A.M., S.D., *Professor of Physics, Dean of the Lawrence Scientific School, and Dean of the Graduate School of Applied Science,* University 16.
- HERMANN JULIUS WEBER, Ph.D., *Instructor in German,* 43 Lexington Ave.
- IRVING LESTER WINTER, A.B., *Assistant Professor of Public Speaking,* Hubbard Park.
- ARCHIBALD CARY COOLIDGE, Ph.D., *Professor of History,* Randolph 4.
- CHARLES HOMER HASKINS, Ph.D., *Professor of History, and Dean of the Graduate School of Arts and Sciences,* Prescott 15.
- CLIFFORD HERSCHEL MOORE, Ph.D., *Professor of Latin,* 112 Brattle St.
- CHARLES LEONARD BOUTON, S.M., Ph.D., *Assistant Professor of Mathematics,* 5 Avon St.
- MARTIN MOWER, *Instructor in Fine Arts,* 19 Huron Ave.
- WINTHROP JOHN VANLEUVEN OSTERHOUT, Ph.D., *Assistant Professor of Botany,* 60 Buckingham St.
- HENRY AUGUSTUS TORREY, Ph.D., *Assistant Professor of Chemistry,* 5 Fuller Place.
- HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineering, and Director of the Engineering Camp,* 6 Clement Circle.
- JAY BACKUS WOODWORTH, S.B., *Assistant Professor of Geology,* 51 Oxford St.
- EDWARD VERMILYE HUNTINGTON, Ph.D., *Assistant Professor of Mathematics,* 27 Everett St.
- GREGORY PAUL BAXTER, Ph.D., *Assistant Professor of Chemistry,* Boylston 2.
- BERTEL GLIDDEN WILLARD, A.B., *Instructor in Public Speaking,* 30 Huntington Ave., Boston.
- WILLIAM SCOTT FERGUSON, Ph.D., *Assistant Professor of History,* Garden Terrace.
- RALPH BARTON PERRY, Ph.D., *Assistant Professor of Philosophy,* 104 Lake View Ave.

- ALBERT WILHELM BOESCHE, Ph.D., *Instructor in German*, 15 Walker St.
- ARTHUR ORLO NORTON, A.M., *Assistant Professor of the History and Art of Teaching*, 17 Brewster St.
- ROBERT MEARNs YERKES, Ph.D., *Assistant Professor of Comparative Psychology*, 30½ Mellen St.
- DOUGLAS WILSON JOHNSON, S.B., Ph.D., *Assistant Professor of Physiography*, 56 Wendell St.
- ARTHUR POPE, A.B., *Assistant Professor of Fine Arts*, 6 Buckingham Place.
- GEORGE SHANNON FORBES, Ph.D., *Instructor in Physical Chemistry*, Boylston Hall.
- ARTHUR FISHER WHITTEM, Ph.D., *Instructor in Romance Languages*, 23 Woodbridge St.
- DEAN PUTNAM LOCKWOOD, Ph.D., *Instructor in Greek and Latin*, Holyoke 33.
- PERCY WILLIAMS BRIDGMAN, Ph.D., *Fellow for Research in Physics*, Craigie 507.
- JOHN CHARLES DUNCAN, Ph.D., *Instructor in Astronomy*, 16 Eustis St.
- EMORY LEON CHAFFEE, S.B., A.M., *Assistant in Physics*, 262 Upland Road.
- HARVEY CORNELIUS HAYES, A.M., *Assistant in Physics*, 262 Upland Road.
- 
- HAROLD NORTH FOWLER, Ph.D., *Clark Professor of Greek in Western Reserve University*, 2033 Cornell Road, Cleveland, O.
- CHARLES HUBERT FARNSWORTH, *Adjunct Professor of Music in Teachers' College, Columbia University*, New York, N.Y.
- WILLIAM MACDONALD, Ph.D., LL.D., *George L. Littlefield Professor of American History in Brown University*, 127 Waterman St., Providence, R.I.
- JAMES WALTER RANKIN, Ph.D., *Professor of English in the University of Vermont*, Burlington, Vt.
- THOMAS CROSBY, A.M., *Assistant Professor of English and Public Speaking in Brown University*, 49 George St., Providence, R.I.
- EDWIN ALMIRON GREENLAW, Ph.D., *Professor of the English Language and Literature in Adelphi College*, 57 Turner Place, Brooklyn, N.Y.



- JOHN PATTEN MARSHALL, *Assistant Professor of Music*  
*in Boston University,* 497 Beacon St., Boston.
- ROBERT PALFREY UTTER, Ph.D., *Associate Professor of*  
*English in Amherst College,* 83 So. Pleasant St., Amherst.
- ALBERT BENEDICT WOLFE, Ph.D., *Professor of Economics*  
*and Sociology in Oberlin College,* Oberlin, O.
- HORACE UPHAM RANSOM, A.B., M.C.E., *formerly Austin*  
*Teaching Fellow in Applied Mechanics,* 1 Arlington St., Boston.
- HENRY ROBINSON SHIPHERD, A.B., *Head of the English*  
*Department in the Francis W. Parker School,*  
 550 Webster Ave., Chicago, Ill.

#### Assistants

- EDGAR OSCAR PARKER, *Assistant in Drawing,* 429 Huron Ave.  
 and others.

#### In Charge of Historical Excursions

- WILLIAM EDWIN DORMAN, A.B., LL.B., *formerly Assis-*  
*tant in History,* Lynn.
- GUY NEWHALL, A.B., LL.B., *formerly Assistant in Gov-*  
*ernment,* Lynn.

## COURSES

---

By an asterisk (\*) are indicated the courses which are accepted, under varying conditions, for credit toward a degree in Harvard University. In most instances the accepted courses count toward the degrees of A.B. and S.B. The detailed regulations about the counting of courses for degrees are stated in the full Announcement of the Summer School (to be issued in April).

The fee for each course is \$20, except in the cases specially indicated in the following list.

### ASTRONOMY

- \*S1. Elementary Astronomy. — Lectures, laboratory work, and observations. *Five times a week.* Dr. JOHN C. DUNCAN. Fee, \$30.

### BOTANY

Fee, \$30 for each course.

- \*S1. Introductory Course. — Lectures and laboratory work. *Five times a week.* Asst. Professor W. J. V. OSTERHOUT.
- \*S2. Plant Physiology. — Lectures and laboratory work. *Five times a week.* Asst. Professor W. J. V. OSTERHOUT.
- \*S20. Research in Plant Physiology. — Asst. Professor W. J. V. OSTERHOUT.

### CHEMISTRY

Fee, \$25 for each course, with additional charge for materials and breakage.

- \*S1. Elementary Theoretical and Descriptive Chemistry. — Lectures and laboratory work. *Five times a week.* Asst. Professor GREGORY P BAXTER.
- \*S2. Organic Chemistry. — Lectures and laboratory work. *Five times a week.* Asst. Professor HENRY A. TORREY.
- Open to students having a good knowledge of general inorganic chemistry.

- \*S3. Qualitative Analysis. — Lectures and laboratory work. *Five times a week.* Asst. Professor HENRY A. TORREY.  
Open to students having a knowledge of elementary descriptive chemistry.
- \*S4. Quantitative Analysis. — Laboratory work. *Five times a week.* Asst. Professor GREGORY P. BAXTER.  
Open to students having a knowledge of qualitative analysis. Advised for students intending to enter the Harvard Medical School.
- \*S6. Physical Chemistry. — Lectures and laboratory work. *Five times a week.* Dr. GEORGE SHANNON FORBES.  
Open to students having a knowledge of elementary chemistry and physics.
- \*S20c. Research in Organic Chemistry. Asst. Professor HENRY A. TORREY.
- \*S20f. Research in Inorganic Chemistry. Asst. Professor GREGORY P. BAXTER.

### ECONOMICS

- S1. Principles of Economics. *Five times a week.* Professor ALBERT B WOLFE, of Oberlin College.

### EDUCATION

- \*S2a. General Principles of Education. — Methods of studying educational problems; critical examination of contemporary educational theory. — Lectures, conferences, and reports. *Five times a week.* Asst. Professor ARTHUR O. NORTON.
- \*S3a. Organization and Administration of Schools and School Systems. Programmes (courses) of study; duties and opportunities of superintendents and principals. — Lectures, reports, and discussions. *Five times a week.* Professor PAUL H. HANUS.
- \*S5b. The Education of the Individual; Study and treatment of both unusual and normal types; defects and diseases of school children from the teacher's point of view. — Observation of cases in hospitals and other institutions. — Lectures and reports. *Five times a week.* Asst. Professor ARTHUR O. NORTON; with clinical demonstrations and occasional lectures by WILLIAM H. POTTER, D.M.D., of the Harvard Dental School, JAMES W. SEVER, M.D., of the Children's Hospital, WALTER E. FERNALD, M.D., Superintendent of Massachusetts School for the Feeble Minded, and others.

- \*S20. Seminary.—Special study of problems in school administration, secondary education, and industrial education. Professor PAUL H. HANUS.

Primarily for principals of schools, school superintendents, normal school teachers, and college instructors in Education.

## ENGINEERING

For courses in Surveying, } Harvard Engineering Camp, Squam Lake,  
 Mechanics, } N.H.,  
 Shopwork, Rindge Manual Training School, Cambridge,  
 with information about fees and other matters, see pages 21–22.

## ENGLISH

- \*S4. Rhetoric and English Composition. — Lectures, recitations, written exercises, and conferences. *Five times a week.* Mr. HENRY ROBINSON SHIPHERD, of the Francis W. Parker School, Chicago, Ill.
- \*S5. English Composition (second course). — Lectures, daily themes, longer themes, and conferences. *Five times a week.* Professor EDWIN A. GREENLAW, of Adelphi College.
- \*S6. English Composition (third course). — Lectures, daily themes, longer themes, and conferences. Associate Professor ROBERT P. UTTER, of Amherst College.
- \*S28. History and Development of English Literature in Outline. — *Five times a week.* Professor EDWIN A. GREENLAW, of Adelphi College.
- S45. History of English Literature in the Nineteenth Century. — *Five times a week.* Mr. C. T. COPELAND.
- \*S3. Anglo-Saxon. — Bright's Anglo-Saxon Reader. *Five times a week.* Professor JAMES W. RANKIN, of the University of Vermont.
- S60. College Entrance Requirements in English for Teachers. — Books and composition. — Lectures, themes, and conferences. Associate Professor ROBERT P. UTTER, of Amherst College.

## FINE ARTS

- \*S1. The Theory of Pure Design. — Lectures, conferences, practice in design, and study of historic examples. *Tu., Wed., Th., and Fri.* Asst. Professor ARTHUR POPE, assisted by Mr. E. O. PARKER. Fee, \$25.

\*S2. Drawing and Painting in Representation. — Lectures, practice, and visits to Museums. *Tu., Wed., Th., and Fri.* Mr. MARTIN MOWER, assisted by Mr. E. O. PARKER. Fee, \$25.

\*S3. The History of Greek Art. — Lectures and conferences, illustrated with the stereopticon. *Five times a week.* Professor HAROLD N. FOWLER, of Western Reserve University.

Not open to undergraduates in Harvard College except with the express consent of the Dean in charge of the Summer School.

### FRENCH

\*S1. Intermediate Course for Teachers. — Reading and composition. *Five times a week.* Dr. ARTHUR F. WHITEM.

S2. French Conversation. *Five times a week.* Mr. ALPHONSE BRUN. Fee, \$10, when combined with Course S1.

Open to students who can understand French when spoken slowly.

### GEOLOGY AND GEOGRAPHY

Correspondence concerning the summer courses in Geology and Physiography should be addressed to the instructors in charge, not later than June 1, 1910. These courses are open to men only. Information about fees and expenses will be furnished on request.

\*S5. Field Geology. — Field Work in Montana. *Six days a week, for five weeks, beginning early in July.* Asst. Professor JAY BACKUS WOODWORTH.

\*S6. Physiographic Field Work in Colorado. *Six days a week, for two or three weeks in July, to be extended to five weeks by private field work.* Professor WILLIAM M. DAVIS.

\*S20a. Physiographic Field Investigation. *Six days a week, for five weeks or ten weeks, beginning about July 1.* Professor WILLIAM M. DAVIS and Asst. Professor DOUGLAS W. JOHNSON.

\*S20c. *Section A.* Geological and Petrographical Field Studies. *Six days a week, for five weeks or ten weeks.* Professor JOHN E. WOLFF.

\*S20c. *Section B.* Structural or Glacial Field Work. *Six days a week, for five weeks or ten weeks.* Asst. Professor JAY BACKUS WOODWORTH.

### GERMAN

\*S1. Intermediate Course for Teachers. — Grammar, composition, and methods of teaching. *Five times a week.* Dr. ALBERT W. BOESCHE.



- S2. German Conversation. *Five times a week.* Dr. ALBERT W. BOESCHE. Fee, \$10, when combined with another course in German.
- \*S3. German Literature. — Dramatists of the Nineteenth Century. *Five times a week.* Dr. HERMANN J. WEBER.
- \*S4. Middle High German; German Literature from the Eleventh to the Fourteenth Century. *Five times a week.* Dr. HERMANN J. WEBER.

### GOVERNMENT

- \*S1. Civil Government; the United States, Great Britain, Germany, France, and Switzerland. — Lectures, conferences, and thesis. *Five times a week.* Dr. ARTHUR N. HOLCOMBE.

### GREEK

- SG. Greek for Beginners. *Five times a week.* Dr. DEAN PUTNAM LOCKWOOD.

### HISTORY

- \*S2. Ancient History for Teachers. — Lectures, reports, reading, and examination of illustrative material. *Five times a week, 9-10 and 11-12 A.M.* Asst. Professor WILLIAM S. FERGUSON.
- \*S4. History of England from 1689 to the present. — Lectures, discussions, and written reports. *Five times a week.* Professor WILLIAM MACDONALD, of Brown University.
- \*S5. American History from the beginnings of English colonization to 1783. — Lectures, discussions, and written reports. *Five times a week.* Professor WILLIAM MACDONALD, of Brown University.

### COURSES FOR ADVANCED STUDENTS

- \*S25. Historical Bibliography. *Two hours, once a week.* Professor CHARLES H. HASKINS.  
This course is open only to college graduates.
- \*S20*i*. Research in Greek and Roman History. Asst. Professor WILLIAM S. FERGUSON.
- \*S20*c*. Research in Mediaeval History. Professor CHARLES H. HASKINS.
- \*S20*d*. Research in Modern European or Asiatic History. Professor ARCHIBALD CARY COOLIDGE.
- \*S20*e*. Research in American History. Professor WILLIAM MACDONALD, of Brown University.

## LATIN

- S1.** Latin for Teachers.—Grammar, methods of teaching; Caesar, Ovid, Cicero, Virgil. *Five times a week.* Professor CLIFFORD H. MOORE.
- \*S2.** The Life and Works of Virgil. *Five times a week.* Professor CLIFFORD H. MOORE.

## MATHEMATICS

- \*SAB.** Trigonometry and Analytical Geometry.—Lectures and Problems. *Five times a week.* Asst. Professor EDWARD V. HUNTINGTON.
- \*SD.** Advanced Algebra.—Lectures and Problems. *Five times a week.* Asst. Professor CHARLES L. BOUTON.  
Open to students having a knowledge of algebra through quadratics.
- S2.** Calculus.—Lectures and problems. *Five times a week.* Professor WILLIAM F. OSGOOD.  
Open to students having a knowledge of plane trigonometry and plane analytic geometry.
- \*S3.** Introduction to Modern Geometry.—Lectures and Problems. *Five times a week.* Asst. Professor CHARLES L. BOUTON.  
Open to students having a knowledge of plane elementary and plane analytic geometry.

## READING COURSES FOR ADVANCED STUDENTS

- \*S20d.** Topics in the Theory of Functions of a Complex Variable or of Real Variables. Professor WILLIAM F. OSGOOD.
- \*S20e.** Subject Matter of Elementary Mathematics. Asst. Professor CHARLES L. BOUTON.  
A reading knowledge of French and German will be required for this course.

## MUSIC

- \*S1.** The Appreciation of Music: Analytical Study of Masterpieces from the point of view of the listener. *Five times a week.* Asst. Professor JOHN P. MARSHALL, of Boston University.  
Requires no technical knowledge of music.
- \*S2.** Elementary Harmony. *Five times a week.* Asst. Professor JOHN P. MARSHALL, of Boston University.  
Open to students acquainted with the rudiments of music, and having some proficiency in piano-playing.

\*S3. Advanced Harmony. *Five times a week.* Asst. Professor JOHN P. MARSHALL, of Boston University.

Open to students having a knowledge of elementary harmony.

S4. School Music. — Course in practice; ear-training and tone-thinking. *Five times a week.* Adjunct Professor CHARLES H. FARNSWORTH, Director of the Department of Music, Teachers College, Columbia University.

S5. School Music. — Course in theory of teaching. Lectures and practical exercises. *Five times a week.* Adjunct Professor CHARLES H. FARNSWORTH, Director of the Department of Music, Teachers College, Columbia University.

### PHILOSOPHY

\*S1. General Introduction to Philosophy. *Five times a week.* Asst. Professor RALPH BARTON PERRY.

S2. Introduction to Ethics, theoretical and applied. *Five times a week.* Asst. Professor RALPH BARTON PERRY.

\*S20. Seminary in Philosophy. Private conferences in Ethics, in Current Metaphysical Problems and Tendencies, or in the History of Philosophy. Asst. Professor RALPH BARTON PERRY.

### PHYSICAL EDUCATION

Courses in Theory. — Graded series, covering four years and including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, Methods and Practice of Teaching, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

Courses in Practice. — Graded series, covering four years and including Swedish and German Floor Work, Gymnastic Games, Field and Track Athletics, Aesthetic and Folk Dancing, Corrective Gymnastics, Playground Work, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

A special circular containing full particulars will be sent on application to the Director, Dr. Dudley A. Sargent, Harvard University, Cambridge, Mass.

## PHYSICS

\*S.B. Elementary Experimental Physics for Teachers. — Lectures, laboratory work, and problems. *Five times a week.* Mr. EMORY L. CHAFFEE and Mr. HARVEY C. HAYES. Fee, \$30.

\*S.C. Experimental Physics; Mechanics, Sound, Heat, Light, Magnetism, and Electricity. — Lectures, laboratory work, and problems. *Five times a week.* Dr. PERCY W. BRIDGMAN. Fee, \$30.

Intended for students who have a knowledge of elementary physics.

S.D. Advanced experimental work. — Professor WALLACE C. SABINE and Dr. PERCY W. BRIDGMAN.

No fixed programme will be followed, but opportunity will be given to individuals to work on subjects of special interest.

## PSYCHOLOGY

\*S1. Descriptive Psychology. — Lectures, demonstration experiments, and either laboratory or thesis work. Asst. Professor ROBERT M. YERKES.

\*S2. The Applications of Psychology, with special reference to education. — Lectures and laboratory exercises. Asst. Professor ROBERT M. YERKES.

The fee for Courses S1 and S2 taken together is \$35.

\*S20. Advanced Experimental Work.

Properly qualified persons may, by special arrangement, do advanced work in animal or human psychology under the direction of Professor ROBERT M. YERKES or his assistant. For this research both library and laboratory facilities are provided.

## PUBLIC SPEAKING AND READING

For Courses S1, S3, S4, S7, the fee is \$20 for one course; on payment of an additional fee of \$10 the student will have the right to take regularly one additional course in Public Speaking and Reading, and to attend as an Auditor any of the other courses.

In order to obtain credit for one half-course toward the degree of A.B. a student must obtain the Certificate in *two* out of the three courses, S3, S4, S7.

S1. Vocal Technique in speaking and reading. *Five times a week.* Mr. BERTEL G. WILLARD.

- \*S3. Public Speaking.— Training in the delivery of both selected and original speeches. *Five times a week.* Asst. Professor IRVAH L. WINTER (once a week) and Asst. Professor THOMAS CROSBY, of Brown University (four times a week).
- \*S4. Vocal Interpretation of English Prose and Poetry.— Primarily for Teachers of English. *Five times a week.* Asst. Professor IRVAH L. WINTER (once a week) and Asst. Professor THOMAS CROSBY, of Brown University (four times a week).
- \*S7. Voice, Speaking, and Interpretation.— Advanced course, especially for Teachers of Public Speaking and Reading and for other advanced students. *Five hours a week: Mon. and Fri., 10-12, and a fifth hour.* Asst. Professor IRVAH L. WINTER.
- S9. Practice in Oral Reading.— A less formal and complete course, intended primarily for Teachers of English who are taking another course in the Summer School. *Three times a week, for five weeks: Mon., Tues., Thur., at 2.30.* Mr. BERTEL G. WILLARD. Fee, \$10.
- S12. A course of fifteen Readings, with incidental Lectures. *Mon., Thur., Fri., at 12.* Asst. Professor IRVAH L. WINTER. Fee, \$2.50.

## SOCIOLOGY

- S1. Sociology. *Five times a week.* Professor ALBERT B. WOLFE, of Oberlin College.



## ENGINEERING

Men only can be admitted to the Summer courses in Engineering. For men not members of Harvard College on June 23, 1910, the fees charged are as follows:—

Engineering 4a	\$86	Engineering 10a	} \$25 each.
“ 4c	\$43	“ 10b	
“ 4d	\$75	“ 10c	
“ 5b	} \$48 each	“ 10e	
“ 5e			

In Courses 4a, 4c, 4d, 5b, 5e, the fee covers board and lodging at the Engineering Camp, as well as instruction and laboratory fee, but not charges for damage.

The following courses in **Surveying** and **Mechanics** will be given at the Harvard Engineering Camp, Squam Lake, N. H.

4a. Surveying. — Use of instruments; Plane and Topographical Surveying; Levelling; Map Drawing and Field Practice. *Six weeks, beginning Thursday, June 23.* Asst. Professor H. J. HUGHES and assistants.

Open to students who have studied Plane Trigonometry.

This course is especially adapted for students of Civil Engineering, Geology, Mining and Metallurgy, Landscape Architecture, and Forestry, and is recommended for other technical students.

4c hf. Geodetic Surveying. — Determination of Position; Triangulation; Precise Levelling; Topography. *Three weeks, beginning Thursday, July 14.* Asst. Professor H. J. HUGHES and assistants.

Open to students who have passed satisfactorily in Course 4a, taken in a previous summer, and have a knowledge of spherical trigonometry.

This course is especially adapted for students of Civil Engineering who intend to enter Government Survey Work.

4d. Railroad Engineering (first course). — Railroad Curves and Location. Field and Office Practice. *Five weeks, beginning Wednesday, August 3.* Asst. Professor H. J. HUGHES and assistants.

Open to students who have passed satisfactorily in Course 4a or its equivalent.

This course is especially adapted for students of Civil Engineering, Mining and Metallurgy, and for any student whose future work will require a knowledge of the principles of curves, grades, and earthwork computation.

5b hf. Elementary Statics. — Graphic and Algebraic Methods. *Three weeks, beginning Thursday, June 23.* MR. HORACE U. RANSOM.  
Open to students who have passed satisfactorily in Course 1b or an equivalent.

This course is necessary for the courses in Applied Mechanics.

5e hf. Elementary Kinematics and Kinetics. *Three weeks, beginning Thursday, July 14.* MR. HORACE U. RANSOM.

Open to students who have passed satisfactorily in Course 5b or an equivalent, and in the first half of Course 1c or an equivalent.

This course is necessary for the courses in Applied Mechanics.

For further information address Professor H. J. Hughes, 114 Pierce Hall, Cambridge, Massachusetts.

The following courses in **Shopwork** will be given at the Rindge Manual Training School, Cambridge, during the summer of 1910. All four courses may be taken in one summer.

10a. Chipping, Filing, and Fitting. — Use of Hand Tools. Fitting by Hand. Study of the Metals in practical working. Lectures and laboratory work. *Ninety hours.* MR. EDWARD R. MARKHAM.

10b. Blacksmithing. — Use of Tools. Forging, Welding, Tool-dressing, and Tempering. Lectures and laboratory work. *Ninety hours.* MR. EDWARD R. MARKHAM.

Courses 10a and 10b will begin about June 15 and last for four and one half weeks.

10c. Pattern Making and Foundry Practice. — Use of Wood-working Tools. Casting in Iron and Alloys. Lectures and laboratory work. *Ninety hours.* MR. EDWARD R. MARKHAM.

10e. Machine Shop Practice. — Use of Machine Tools. Construction of Parts of Machinery. Finishing and Assembling Parts. Lectures and laboratory work. *Ninety hours.* MR. EDWARD R. MARKHAM.

Courses 10c and 10e will begin about July 16 and last for four and one half weeks.

For further information address Professor F. L. Kennedy, Pierce Hall, Cambridge, Massachusetts.

wzs  
11

## HARVARD UNIVERSITY

### SUMMER SCHOOL OF ARTS AND SCIENCES

Thursday, June 29, to Thursday, August 10, 1911

---

#### HARVARD UNIVERSITY

The history and environment of Harvard University have been described as follows: —

“Harvard University, founded as a college in 1636, was for over half a century, until 1693 when the College of William and Mary was chartered in Virginia, the only college in the country. The year following its foundation it was established in Newtowne; and the name of the town changed to Cambridge. Although only three miles inland on the banks of the Charles, Cambridge was at that time a frontier settlement. There is still lingering evidence of this fact in the clumps of willows, sprouts from the old stockade against the Indians, crossing what is now part of the College grounds.

“The College is the centre of Old Cambridge. From it westward and northward run the three principal streets, Brattle Street, past the houses of Longfellow and Lowell; Garden Street, past the elm under which Washington first reviewed the American army and past the Observatory and the Botanic Garden; and Massachusetts Avenue, to Lexington and Concord, the road along which the British soldiers retreated after the Battle of Concord. Near where Garden Street and Massachusetts Avenue separate, on Holmes Place, stood the house in which Dr. Oliver Wendell Holmes was born, and in which were the headquarters of General Ward and of the Committee of Public Safety in 1775. On this stretch of green, June 16, 1775, Samuel Langdon, President of Harvard College, that ‘hot-bed of sedition,’ offered a prayer for the Continental troops there assembled under Colonel Prescott, before they marched to Bunker Hill. On Holmes Place are now the buildings of the Harvard Law School. Near by is a group of buildings, Massachusetts, Harvard, and Hollis Halls, and little Holden Chapel, which date back to pre-revolutionary times. During one period of the Revolution the College was removed to Concord, and these buildings were used as quarters for the Continental Army.

"The University derives many advantages from its nearness to Boston. The Harvard College Library is in size at least the fourth, and possibly the third, library in the country, — the Library of Congress being first, — and it is a considerable advantage to have so near the University the Boston Public Library, which is second in size. Other libraries, such as the Boston Athenaeum, the State Library, the library of the Massachusetts Historical Society, the library of the American Academy of Arts and Sciences, and the library of the Massachusetts Military Historical Society, furnish reinforcement in particular fields. The great collections of paintings, sculpture, and other objects in the Boston Museum of Fine Arts offer unsurpassed opportunities of artistic education and enjoyment. Boston is an important musical centre; and is visited by many lecturers and men of note. A terminal centre for railroads and for steamship lines, it affords many and convenient means of communication with the immediate and more distant parts of the country. The highly developed park-system of Boston and of the metropolitan district is one of the great charms of the region.

"The more distant surroundings of Cambridge, the sea-coast and woods, the lake regions of Maine and the White Mountains of New Hampshire, the Berkshire Hills of Massachusetts, and Cape Cod, afford beautiful and varied scenery for the vacation periods. The steamship service to New Brunswick and Nova Scotia gives, at comparatively slight expense, ready access to a beautiful region for an economical long vacation. The neighboring coast towns of Plymouth, Salem, Marblehead, and Gloucester are reminiscent of Colonial days and are of simple, picturesque beauty.

"The general statistics of the University are as follows: — Its material resources are represented by an invested, income-bearing endowment of about twenty-two million dollars, and buildings, laboratories, and museums, valued, conservatively, at twelve million dollars. The grounds for instruction and research, and for the use of students, include 80 acres in Cambridge for varied University purposes; 63 acres across the river in Boston for athletic purposes; 11 acres for the Medical School buildings in Boston; 394 acres for applied biology, arboriculture, horticulture, and allied subjects, in Jamaica Plain, a suburb of Boston; 700 acres for the Summer Engineering Camp on Squam Lake in the foothills of the White Mountains; and 2000 acres, the Harvard Forest, at Petersham, for field work in forestry; a total of more than 3200 acres. To this list may be added the Arequipa Observatory in Peru.

"On the staff of the University there are 634 officers of instruction, and 128 administrative officers, preachers, curators, etc. Not counting the students in the Summer Schools (1106), or the students in Radcliffe College (489 women), the number of students in Harvard University at the time of the issue of the Catalogue of 1910-11 was 4123.

"The rooms of the college buildings have associations with the student days of Rufus Choate, Charles Sumner, Edward Everett, Wendell Phillips, William Fitzhugh Lee; of the historians, John Lothrop Motley, Francis Parkman, George Bancroft, and William H. Prescott; of Ralph Waldo Emerson, Henry David Thoreau, James Russell Lowell, Oliver Wendell Holmes; of Edward Everett Hale and Phillips Brooks, and others whose names are as well known locally and held in as affectionate regard. The Harvard Memorial Society has made these associations more real and more personal by posting in each room a printed list of occupants from the beginning."

To these rich and inspiring associations and surroundings of the oldest American college, students in the Summer School are invited, as well as to the discipline and study of the present-day University summer courses. During the six weeks' session there is abundant opportunity, both in private walks and trips and in more elaborate excursions made under the guidance of competent scholars, to become acquainted with the scenes of historic events and the homes and familiar localities of great writers. Especially those teachers whose work includes American history and literature can find here, more than at any other place in the world, personal contact with historic places significant for this part of their daily teaching.

### THE SUMMER SCHOOL

Summer instruction has been offered at Harvard for more than forty years, a longer period than at any other university in this country. It began in a summer course in botany, organized in 1871 by Professor ASA GRAY; which was soon followed by courses in biology, chemistry, and geology, taught by Professors LOUIS AGASSIZ, JOSIAH P. COOKE, and NATHANIEL S. SHALER. The gradual enlargement of these courses into the Summer School of Arts and Sciences was the work of Professor SHALER.

The present system of summer courses is arranged with the purpose that a student shall be occupied for six weeks with a single subject. This plan of study is distinctive of the Harvard Summer School; and a long experience has given increasing confidence in it. In any one course sufficient work is provided, — with daily lectures (in some courses two lectures a day are given), laboratory exercises, written work, and reading, — to fill a student's working time. In this way it is possible to make the courses equivalent to the "half-courses," given in the academic year, to which most of them are strictly parallel. By concentration on one course a stu-



dent can gain in six weeks a good insight into the principles, the characteristic method of thought, and the main facts of an important field of knowledge and study; and in pursuance of this policy students are earnestly advised not to undertake regular work in more than one course (with the exceptions named below).

Besides the student's main course, however, it is practicable to attend the lectures only (without undertaking any other work or preparing for examination) in one additional course. For this an Auditor's Ticket may be had, on payment of an extra fee of \$10.00.

Exceptions to the above are as follows: —

Fine Arts S 2 and S 3 are supplementary to Fine Arts S 1.

French S 2 (French Conversation) and

German S 2 (German Conversation) are especially designed to be taken in conjunction with another course in French or German.

The courses in Public Speaking and Reading may be taken together.

In Physical Education a course in Theory and a course in Practice are advantageously combined.

In Engineering certain courses are arranged so that two or more may be taken in the same summer, see pp. 17-19.

Lectures in all courses begin on Thursday, June 29, 1911. *Except on Saturday, July 1, on which day the regular lectures and exercises will be held during the whole day, there will be no required exercises on Saturday in any courses other than those in Physical Education.*

The courses are open to both men and women, with the exception of courses in Engineering, Geology (field-work), and Metallurgy, which are for men only.

No entrance examination is required for admission to any of the courses. The Instructors may, and in many cases should, be consulted beforehand

**Admission** about requisite preparation or preliminary reading. Their addresses are given below.

In the courses in research and the other courses for graduate and advanced students, only competent students, and in limited number, will be accepted. For admission to any such course the Instructor's permission must be secured in advance.

The summer courses are University courses, and the same standard is set as in other Harvard courses. Most of them are accepted, subject to

**Credit for** the established regulations, to count as half-courses for  
**Degrees and** the degrees of *Bachelor of Arts, Associate in Arts, and*  
**Certificate** *Bachelor of Science*. Seminary work, research courses, and the like, are given credit for these degrees only in accordance with the specific recommendation of the Instructor in each case.

With the previous approval of the proper authorities, advanced work in the Summer School can be counted as part of a programme of work for the degree of *Master of Arts*. For that, as for the degree of A.B. or S.B., continuous residence at the University of at least one academic year is required. Candidates must possess an elementary knowledge of two modern foreign languages (ordinarily French and German), and must pursue, and complete with distinction, a programme of study forming a consistent plan of work, with a definite aim and lying either in one field or in related fields. Such a programme must in every case be approved beforehand by the appropriate Division Committee of the Faculty of Arts and Sciences and by the Administrative Board of the Graduate School of Arts and Sciences.

Some of the more advanced courses of the Summer School, including particularly the Courses in Research, in Advanced Reading, and in Advanced Experimental Work, are available as part of a programme of study for A.M., provided the previous consent of the proper authorities is secured.

With reference to the degree of A.M., the summer courses are especially useful to candidates who need more than a full year of resident study for the degree, or who lack some collateral work which cannot conveniently be done during the year of required residence. Moreover, students intending to carry on advanced study at Harvard in the academic year will often find much saving of time and other advantages for their work in the following winter, if they have already become familiar with the Harvard laboratories, libraries, methods, and teachers, through taking a single course in the preceding summer.

The degree of *Doctor of Philosophy* is not given on the ground of any number of courses taken, or of a stated period of study, but only for high attainment gained by long study in a special field, manifested in examinations and a thesis. For the full requirements for the Ph.D. see the *Harvard University Catalogue* for 1910-11, pp. 546-548. Students working for this degree at Harvard or elsewhere, especially while engaged in research for their thesis, will be heartily welcomed at the libraries of the University, and in some departments laboratory opportunities can be offered to them. They will find in the advanced courses of the Summer School opportunity to carry on their work under the advice and supervision of instructors.

For further information with regard to the Graduate School of Arts and Sciences, and the degrees of A.M. and Ph.D., apply to G. W. ROBINSON, *Secretary*, 24 University Hall, Cambridge, Mass.

The Summer School Certificate, stating that examinations and other tests of the same grade as those required in corresponding courses in Harvard College have been fulfilled, and showing the amount of credit for a

degree carried by the course, is given for each course satisfactorily completed with a grade of *C*, or higher. In Physical Education a special certificate is awarded to those who complete satisfactorily the four years' course. Students are admitted to a summer course, whether they are candidates for the certificate or not.

The Summer School Certificate is usually accepted for the promotion of teachers, and for exemption from certain of the examinations required for licenses to teach, in localities where examinations are held for these purposes. Teachers desiring to take summer courses with such ends in view are advised to inquire beforehand of the School Authorities at the place where they intend to offer the work, as to what credit will be allowed for it.

Libraries and Museums of the University are open in the summer, including the University Library and Reading-room, the special working-library in Harvard Hall, the library of school and college Libraries and Laboratories text-books in Lawrence Hall, the various departmental libraries, the Fogg Art Museum, the Germanic Museum, the Semitic Museum, the Museum of Natural History, and the Peabody Museum of Archaeology and Ethnology. The University Laboratories of Chemistry, Physics, Astronomy, Metallurgy, and Psychology are used for the courses in those subjects.

In Boston the Boston Public Library and the Museum of Fine Arts (open daily, including Sunday, and now fully arranged in its new building) are accessible to students without charge.

Morning Prayers, conducted by clergymen of various denominations, are held daily at 8.45 A.M. in Appleton Chapel. For these services a choir

**Morning Prayers** directed by Professor Marshall will be organized from among the students.

Historical Excursions, seven in number, are arranged for Wednesday afternoons and Saturdays to the districts of greatest historical and literary interest in eastern Massachusetts. They are carefully planned both for enjoyment and instruction, and, as for Museum Visits the past ten years, will be under the guidance of Mr. William E. Dorman and Mr. Guy Newhall, formerly Assistants in the University in the Departments of History and Government.

The Excursions this year will include the following: —

Cambridge and Mt. Auburn  
Bunker Hill and Old Boston  
Lexington and Concord

Hingham and Quincy

Plymouth

Salem and Danvers

Haverhill and Amesbury ("Whittier Excursion")

Five visits to the Boston Museum of Fine Arts will be provided for limited numbers, under the guidance of Museum Docents, without charge.

The Annual Meeting of the Harvard Summer School Association, which includes all present and past members of the Summer School, will be held on Monday, July 3, at 8 P.M., in Sanders Theatre, and **Readings, Lectures, etc.** will be addressed by President LOWELL and others. At the close of the meeting President and Mrs. Lowell will receive the members of the Summer School at the Harvard Union.

During the session Professor COPELAND will give a course of evening Lectures and Readings in English and American Literature in the New Lecture Hall: and on July 18, the one hundredth anniversary of the birth of Thackeray, there will be appropriate observance, with an address by Professor COPELAND.

Four evening Readings from English Literature, intended especially for students in Public Speaking but open to all Summer Students, will be given by Professor WINTER.

On Thursday, June 29, at 12 o'clock, the Public Exercises of the Harvard Chapter of Phi Beta Kappa will be open to students in the Summer School. The oration will be delivered by Professor JOSIAH ROYCE, and the poem by Mr. WITTER BYNNER.

Single Lectures are expected to be given during the Session by the following professors of the University:—

Professor ALBERT BUSHNELL HART: "The Historical Environment of Harvard University."

Dr. RICHARD C. CABOT, Boston.

Professor WALLACE C. SABINE.

Professor BLISS PERRY.

Professor FRED N. ROBINSON.

Professor GEORGE HERBERT PALMER.

A series of organ-recitals under the conduct of Professor JOHN P. MARSHALL will be given in Appleton Chapel.

In addition to the above, which are all open without charge to members of the Summer School, the COBURN PLAYERS will give four performances of classic plays, either in the College Yard or, in case of bad weather, in Sanders Theatre, as follows:—

*Monday, July 31, 8.00 P.M.*

*Tuesday, August 1, 8.00 P.M.*

Wednesday, " 2, { 2.30 P.M.  
8.00 P.M.

The plays will probably include the *Electra* of Euripides and three plays of Shakspeare.

For *Summer Students* tickets to these plays will be sold at the following reduced rates:—

Single tickets, 50 cents.

Season ticket to the four plays, \$1.50.

A higher price will be charged to the public at large.

Phillips Brooks House, with parlors and a writing-room, will be open for social purposes, and various social gatherings are held there during the session of the School. The University tennis-courts are

**Recreation and Climate** session of the school. The University tennis-courts are kept in order through the summer, and at one of the University boat-houses boats for rowing on the Charles

River can be hired by members of the Summer School. The electric-car lines radiating from Boston and Cambridge, and the steamboats of Boston Harbor, offer abundant opportunities for afternoon and Saturday excursions to parks, hills, woods, lakes, and the beaches and rocks of the neighboring sea-shore. Sea-bathing can be had at many points within easy reach. Private swimming-lessons from competent instructors in the pool of the Sargent Gymnasium can be arranged for at a small fee.

The climate of Cambridge during the period of the Summer School is suitable both for study and for out-of-door recreation. Owing to the location of the city near the ocean, the prolonged hot spells which are characteristic of the districts farther inland are here frequently relieved by cool easterly winds from over the water.

The tuition-fee for a course varies from \$20 to \$30. Detailed statements

**Expenses** will be found below in the List of Courses. In addition a registration fee of \$3 is required of every student.

An Auditor's ticket may be obtained, on the additional payment of \$10, by any registered student who has paid the full fee in one course. It will admit to the lectures only (not to laboratory or other special work) in any other courses, with the exception of the courses in Physical Education and those in Public Speaking and Reading.



No reduction of fee will be allowed for late entrance, or for withdrawal, except on account of illness or other like serious and unavoidable cause. In no case will a reduction be allowed when the student is present during more than half the term.

*Money to meet expenses should be brought in cash, bank drafts, cashier's checks or money orders. Checks or drafts should be drawn on Boston or New York banks in order to save cost of exchange.*

*Private checks are not negotiable.*

Comfortable furnished rooms within a half-mile of the University are offered for rent in great abundance at prices ranging from \$1 to \$4 per week for a single room, and \$2.50 to \$7 per week for a suite of rooms, including care of room, light, and the use of a bathroom. Many of the single rooms and suites are suitable for two persons. Complete apartments (furnished) can be hired at reasonable rates by those who wish to undertake light housekeeping.

Table board can be had in private boarding-houses or in public restaurants, at prices which will range from \$4 to \$8 per week.

A list of lodgings and boarding-houses will be sent on application to the Secretary of the Summer School, University Hall, Cambridge, Mass., but it will usually be found more satisfactory to engage board and rooms after arrival in Cambridge.

The average necessary expenses in Cambridge, for the six weeks of the Summer School, not including travelling expenses, may be estimated at \$80-\$90, but with great economy a smaller amount (not less than \$70) can be made to suffice.

Reduced railroad rates to Boston are available for students coming to the Summer School. The only railroad stations for

**Railroad and  
Steamship  
Rates and  
Service** Harvard University are those in Boston, from which Cambridge is reached by electric cars. Baggage should be sent from Boston by baggage-transfer or express.

By direct steamer lines Boston may be reached, cheaply and comfortably, as follows:—

From *New York*, by the Fall River Line, leaving New York daily at 5 P.M.; by the Joy Line (via Providence), leaving New York every week-day at 5.30 P.M.;

From *Philadelphia*, *Baltimore*, and *Norfolk, Va.*, by the lines of the Merchants' and Miners' Transportation Co., with frequent sailings (on these steamers reduced rates are given to students);

From *Savannah*, by the steamers of the Ocean Steamship Co., sailing twice a week;

From *Charleston, S.C.*, and *Jacksonville, Fla.*, by the Clyde Line, and from *Mobile* and *Galveston* by the Mallory Line, both sailing to New York, where good connection is made for Boston by either rail or steamer.

The Summer School is thus conveniently accessible to students from the more distant as well as the nearer Southern States.

From *Portland, Rockland, Bangor, and Eastport, Me.*, and *St. John, N.B.*, and from *Yarmouth, N.S.* (for *Digby* and *Halifax*), the steamers of the Eastern Steamboat Co. and the Dominion Atlantic Railway sail either daily or several times a week, and from *Halifax* and *Prince Edward Island* there are weekly sailings by the Plant Line.

Before being enrolled as a member of a course each student is required to register in person at the OFFICE OF THE SUMMER SCHOOL in Massachusetts Hall, and to pay all required fees and charges at the **Registration, etc.** BURSAR'S OFFICE in Dane Hall. Students should register on or before Wednesday, June 28, since lectures in all courses will begin promptly at the announced hours on Thursday morning, June 29. It is of the first importance that all students should be present at the first meeting of their classes.

The places of meeting of the several courses will be announced on the bulletin boards.

Regular exercises will be held on Saturday, July 1, both morning and afternoon, but not on the succeeding Saturdays of the session.

Final examinations in all courses will be held on Wednesday, August 9, and Thursday, August 10, 1911.

The Harvard Summer School Association, comprising all Summer School students and officers, past and present, has been organized "to promote the interests and welfare of the Harvard Summer School and of its members." The annual meeting will be held on Monday evening, July 3, 1911. The Secretary is Mr. Charles E. Quirk, 53 Farragut Road, South Boston, Mass.

Undergraduates in Harvard College are not permitted in any one summer to count more than one of the summer courses given in Cambridge (except courses in Shopwork), obtaining credit for it as a "half-course."

Undergraduates deficient in their college record will be admitted in 1911 to the following courses *only*:—

French S 4 (Second-year College French),  
German S 4 (Second-year College German),  
Mathematics S 4 (Trigonometry).

The total enrolment of the Summer School in 1910 was 873 persons, of whom 54 per cent were men and 46 per cent women. 58 per cent of the whole number were teachers and school officers; 34 per cent were holders of college degrees; 17 per cent were undergraduates in Harvard or Radcliffe College. The residence of the students was as follows:—

New England States . . . . .	51 per cent
Middle States . . . . .	21 “ “
Southern States . . . . .	9 “ “
Lake States . . . . .	10 “ “
Western States . . . . .	6 “ “
Foreign Countries . . . . .	3 “ “

The List of Students in the Summer School of 1910, arranged by courses, will be sent on application.

Further information and advice will be gladly furnished on application to the SECRETARY OF THE SUMMER SCHOOL,

19 University Hall,  
Cambridge, Mass.

**Note.**—During the Session the Office of the Summer School is in Massachusetts Hall.

#### Other Summer Courses in Harvard University.

For information about

The Harvard Summer School of Medicine, June 1–October 1, 1911,  
apply to the

DIRECTOR OF THE HARVARD SUMMER SCHOOL OF MEDICINE,  
Harvard Medical School,  
Boston, Mass.

For information about

Graduate Summer Courses in Applied Biology,  
in Architecture,  
in Mining,  
apply to the DEAN OF THE GRADUATE SCHOOL OF APPLIED SCIENCE,  
16 University Hall,  
Cambridge, Mass.

OFFICERS OF THE  
SUMMER SCHOOL OF ARTS AND SCIENCES  
1911

---

President

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., Ph.D. (*hon.*).

Administrative Board

JAMES HARDY ROPES, A.B., D.D., *Hollis Professor of Divinity*, and  
*Dexter Lecturer on Biblical Literature*, DEAN.

JOSIAH ROYCE, Ph.D., LL.D., *Professor of the History of Philosophy*.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and Art  
of Teaching*.

CHARLES HALL GRANDGENT, A.B., *Professor of Romance Languages*.

CLIFFORD HERSCHEL MOORE, Ph.D., *Professor of Latin*.

WINTHROP JOHN VANLEUVEN OSTERHOUT, Ph.D., *Assistant Professor  
of Botany*.

HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil En-  
gineering*, and *Director of the Engineering Camp*.

WILLIAM BENNETT MUNRO, Ph.D., LL.B., *Assistant Professor of Gov-  
ernment*.

Secretary

GERALDINE S. PROUTY, A.B.

Instructors

DENMAN WALDO ROSS, Ph.D., *Lecturer on the Theory  
of Design*, 24 Craigie St.

DUDLEY ALLEN SARGENT, A.M., M.D., S.D., *Director  
of the Hemenway Gymnasium*, 27 Everett St.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the His-  
tory and Art of Teaching*, 2 Berkeley St.

JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography  
and Mineralogy*, and *Curator of the Mineralogical  
Museum*, 300 Hammond St., Chestnut Hill.

CHARLES TOWNSEND COPELAND, A.B., *Assistant Profes-  
sor of English*, Hollis 15.

EDWARD RUSSELL MARKHAM, *Instructor in Shopwork*, 8 Ellsworth Ave.

HERMANN JULIUS WEBER, Ph.D., *Instructor in German*,  
43 Lexington Ave.

- IRVAH LESTER WINTER, A.B., *Assistant Professor of Public Speaking*, Hubbard Park.
- ARCHIBALD CARY COOLIDGE, Ph.D., *Professor of History*, Randolph 4.
- MARTIN MOWER, *Instructor in Fine Arts*, 35 Mellen St.
- HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineering*, and *Director of the Engineering Camp*, 6 Clement Circle.
- JAY BACKUS WOODWORTH, S.B., *Assistant Professor of Geology*, 51 Oxford St.
- EDWARD VERMILYE HUNTINGTON, Ph.D., *Assistant Professor of Mathematics*, 27 Everett St.
- GREGORY PAUL BAXTER, Ph.D., *Assistant Professor of Chemistry*, Boylston 2.
- WILLIAM SCOTT FERGUSON, Ph.D., *Assistant Professor of History*, 17 Chauncy St.
- GEORGE LUTHER LINCOLN, A.M., *Instructor in Romance Languages*, 2000 Commonwealth Ave., Boston.
- RALPH BARTON PERRY, Ph.D., *Assistant Professor of Philosophy*, 104 Lake View Ave.
- BERTEL GLIDDEN WILLARD, A.B., *Instructor in Public Speaking*, 30 Huntington Ave., Boston.
- ROBERT MEARNS YERKES, Ph.D., *Assistant Professor of Comparative Psychology*, 3 Fuller Place.
- TOM PEETE CROSS, S.B., Ph.D., *Instructor in English*, 60 Kirkland St.
- ARTHUR POPE, A.B., *Assistant Professor of Fine Arts*, 6 Buckingham Place.
- ERNEST HATCH WILKINS, Ph.D., *Instructor in Romance Languages*, 58 Shepard St.
- LATHAM CLARKE, S.B., Ph.D., *Instructor in Industrial Chemistry*, Boylston 15.
- EWALD EISERHARDT, Ph.D., *Instructor in German*, 378 Harvard St.
- GEORGE SHANNON FORBES, Ph.D., *Instructor in Chemistry*, Boylston 3.
- HERBERT MELVILLE BOYLSTON, S.B., A.M., *Assistant in Metallurgy and Metallography*, 43 Upland Road.
- ASBURY HAVEN HERRICK, A.M., *Instructor in German*, 34 Maple Ave.
- HENRY WYMAN HOLMES, A.M., *Assistant Professor of Education*, 14 Arlington St.
- CHANDLER RATHFON POST, Ph.D., *Instructor in Greek and in Fine Arts*, Aphorpe 4.
- JOHN CHARLES DUNCAN, Ph.D., *Instructor in Astronomy*, 73 Wendell St.



- ARTHUR NORMAN HOLCOMBE, Ph.D., *Instructor in Government*, 7 Exeter Park.  
 HARRY DAVIS GAYLORD, S.B., *Instructor in Mathematics*, 98 Hemenway St., Boston.  
 HARVEY CORNELIUS HAYES, A.M., *Assistant in Physics*, 262 Upland Road  
 GEORGE LESLIE KELLEY, S.B., *Instructor in Chemistry*, Holworthy 11.  
 HENRY ROBINSON SHIPHERD, A.B., *Assistant in English*,  
*formerly Head of the Department of English, Francis W. Parker School, Chicago*, 26 D Shepard St.
- 
- JOHN CAREW ROLFE, Ph.D., *Professor of the Latin Language and Literature in the University of Pennsylvania*, 4400 Chestnut St., Philadelphia, Pa.  
 WILLIAM MACDONALD, Ph.D., LL.D., *George L. Littlefield Professor of American History in Brown University*, 127 Waterman St., Providence, R.I.  
 EDWIN ALMIRON GREENLAW, Ph.D., *Professor of the English Language and Literature in Adelphi College*, Adelphi College, Brooklyn, N.Y.  
 JOHN PATTEN MARSHALL, *Assistant Professor of Music in Boston University*, 497 Beacon St., Boston.  
 HENRY MILNER RIDEOUT, A.B., *formerly Instructor in English in Harvard University*, Sausalito, Cal.  
 ALBERT BENEDICT WOLFE, Ph.D., *Professor of Economics and Sociology in Oberlin College*, Oberlin, O.  
 MEYER BLOOMFIELD, A.B., *Director of the Vocation Bureau, Boston*, 6 Beacon St., Boston.  
 ROBERT EDOUARD PELLISSIER, S.B., A.M., *formerly Instructor in Romanic Languages in Leland Stanford Jr. University*, Conant 21.
- 

EDGAR OSCAR PARKER, *Assistant in Drawing*.

#### In Charge of Historical Excursions

- WILLIAM EDWIN DORMAN, A.B., LL.B., *formerly Assistant in History*, Lynn.  
 GUY NEWHALL, A.B., LL.B., *formerly Assistant in Government*, Lynn.

## LIST OF COURSES ,

---

The courses in the following list indicated by an asterisk (\*) are accepted, under varying conditions, for credit toward a degree in Harvard University. This includes all the courses except Education S7, French S2, German S2, and the courses in Physical Education. In most instances the accepted courses count toward the degrees of A.B., A.A., and S.B., but in some cases toward the degree of A.A. only. Research and seminary courses can be counted toward a degree only on the special recommendation of the instructor. The detailed regulations about the counting of courses for degrees are stated in the Full Announcement of the Summer School, which may be had on application.

The fee for each course is \$20, except in the cases specially indicated below.

### ASTRONOMY

- \*S1. Elementary Astronomy. — Lectures, laboratory work, and observations. *Five times a week.* Dr. JOHN C. DUNCAN. Fee, \$30.

This course will be given only in case five students apply.

### CHEMISTRY

Fee, \$25 for each course, with additional charge of \$10 for materials, and a deposit for breakage.

- \*S1. Elementary Theoretical and Descriptive Chemistry. — Lectures and laboratory work. *Five times a week.* Asst. Professor GREGORY P. BAXTER.

- \*S2. Organic Chemistry. — Lectures and laboratory work. *Five times a week.* Dr. LATHAM CLARKE.

Open to students having a good knowledge of general inorganic chemistry. Advised for students intending to enter the Harvard Medical School.

- \*S3. Qualitative Analysis. — Lectures and laboratory work. *Five times a week.* Mr. GEORGE L. KELLEY.

Open to students having a knowledge of elementary descriptive chemistry.

- \*S4. Quantitative Analysis. — Laboratory work. *Five times a week.* Asst. Professor GREGORY P. BAXTER.

Open to students having a knowledge of qualitative analysis. Advised for students intending to enter the Harvard Medical School.

- \*S6. Physical Chemistry. — Lectures and laboratory work. *Five times a week.* DR. GEORGE SHANNON FORBES.

Open to students having a knowledge of elementary chemistry and physics.

#### COURSES FOR ADVANCED STUDENTS

- \*S20c. Research in Organic Chemistry. DR. LATHAM CLARKE.  
 \*S20f. Research in Inorganic and Physical Chemistry. Asst. Professor GREGORY P. BAXTER.  
 \*S20h. Research in Physical Chemistry. DR. GEORGE SHANNON FORBES.

#### ECONOMICS

- \*S1. Principles of Economics. *Five times a week.* Professor ALBERT B. WOLFE, of Oberlin College.

#### EDUCATION

- \*S2a. General Principles of Education. — Survey of problems in the theory and practice of education; critical examination of contemporary doctrines; discussion of guiding principles in teaching and school management. — Lectures, reading, investigation, and reports. *Five times a week.* Asst. Professor HENRY W. HOLMES.  
 \*S3a. Organization and Administration of Schools and School Systems. Programmes (courses) of study; duties and opportunities of superintendents and principals. — Lectures, reports, and discussions. *Five times a week.* Professor PAUL H. HANUS.

S7. Vocational Guidance. — The duties and equipment of Teachers as Vocational Counsellors; the theory and practice of vocational guidance. — Lectures, reading, and conferences. *Ten lectures, beginning July 7, and continuing on Mondays, Wednesdays, and Fridays, at 4 P.M., for three weeks.* Mr. MEYER BLOOMFIELD, Director of the Vocation Bureau of Boston.

Fee, \$5 for students registered in another summer course; \$10 for those who take this course alone. An Auditor's Ticket will admit to this course, but as a regular member only, not as a mere auditor.

The course will be limited to fifty members. Students will be admitted in order of application to the Dean, provided they have *previously* consulted the Instructor.

For further information address Mr. Meyer Bloomfield, 6 Beacon Street, Boston, Massachusetts.

## COURSE FOR ADVANCED STUDENTS

\*S20. Seminary.—Special study of problems in school administration, secondary education, and industrial education. Professor PAUL H. HANUS.

Primarily for principals of schools, school superintendents, normal school teachers, and college instructors in Education.

## ENGINEERING

Men only can be admitted to the summer courses in Engineering. For men not members of Harvard College on June 24, 1911, the fees charged are as follows:—

Engineering 4a	\$86	Engineering 10a	} \$25 each.
“ 4c	\$54	“ 10b	
“ 4d	\$75	“ 10c	
“ 5b	\$48 each	“ 10e	
“ 5e			

In Courses 4a, 4c, 4d, 5b, 5e, the fee covers board and lodging at the Engineering Camp, as well as instruction and laboratory fee, but not charges for damage.

## Surveying and Mechanics

The following courses will be given at the Harvard Engineering Camp, Squam Lake, N.H.

\*4a. Surveying.—Use of instruments; Plane and Topographical Surveying; Levelling; Map Drawing and Field Practice. *Six weeks, beginning Saturday, June 24.* Asst. Professor H. J. HUGHES, Mr. C. H. PAIGE, and assistants.

Open to students who have studied plane trigonometry.

This course is especially adapted for students of Civil Engineering, Geology, Mining and Metallurgy, Landscape Architecture, and Forestry, and is recommended for other technical students.

\*4c hf. Geodetic Surveying.—Determination of Position; Triangulation; Precise Levelling; Topography. *Four weeks, beginning Saturday, August 5.* Asst. Professor H. J. HUGHES, Mr. C. F. EBERLY, and assistants.

Open to students who have passed satisfactorily in Course 4a, and have a knowledge of spherical trigonometry.

This course is especially adapted for students of Civil Engineering who intend to enter Government Survey Work.

**\*4d. Railroad Engineering (first course). — Railroad curves and location.**  
Field and office practice. *Five weeks, beginning Saturday, August 5.* Asst. Professor H. J. HUGHES, Mr. C. H. PAIGE, and assistants.

Open to students who have passed satisfactorily in Course 4a or its equivalent.

This course is especially adapted for students of Civil Engineering, Mining and Metallurgy, and for any student whose future work will require a knowledge of the principles of curves, grades, and earthwork computation.

**\*5b hf. Elementary Statics. — Graphic and algebraic methods.** *Three weeks, beginning Saturday, June 24.*

Open to students who have passed satisfactorily in Course 1b or an equivalent.

This course is necessary for the courses in applied mechanics.

**\*5e hf. Elementary Kinematics and Kinetics.** *Three weeks, beginning Saturday, July 15.*

Open to students who have passed satisfactorily in Course 5b or an equivalent, and in the first half of Course 1c or an equivalent.

This course is necessary for the courses in applied mechanics.

**For further information address Professor H. J. Hughes, 114 Pierce Hall, Cambridge, Massachusetts.**

### Shopwork

The courses in Shopwork, given in the shops of the Rindge Manual Training School, Cambridge, are specially adapted for teachers of Manual Training, and those preparing for that work. Men only are admitted. All four courses may be taken in one summer.

**\*10a. Chipping, Filing, and Fitting. — Use of hand tools.** Fitting by hand. Study of the metals in practical working. Lectures and laboratory work. *Ninety hours.* Mr. EDWARD R. MARKHAM.

**\*10b. Blacksmithing. — Use of tools.** Forging, welding, tool-dressing, and tempering. Lectures and laboratory work. *Ninety hours.* Mr. EDWARD R. MARKHAM.

Courses 10a and 10b will begin about June 14 and last for four and one half weeks.

**\*10c. Pattern Making and Foundry Practice. — Use of wood-working tools.** Casting in iron and alloys. Lectures and laboratory work. *Ninety hours.* Mr. EDWARD R. MARKHAM.



- \*10c. Machine Shop Practice.** — Use of machine tools. Construction of parts of machinery. Finishing and assembling parts. Lectures and laboratory work. *Ninety hours.* Mr. EDWARD R. MARKHAM.

Courses 10c and 10e will begin about July 15 and last for four and one half weeks.

For further information address Professor F. L. Kennedy, Pierce Hall, Cambridge, Massachusetts.

### ENGLISH

- \*SA.** English Composition and Methods of Teaching. — Lectures, recitations, written exercises, and conferences. *Five times a week.* Mr. HENRY ROBINSON SHIPHERD.
- \*SB.** English Composition (second course). — Lectures, daily themes, longer themes, and conferences. *Five times a week.* Professor EDWIN A. GREENLAW, of Adelphi College.
- \*SC.** English Composition (third course). — Lectures, daily themes, longer themes, and conferences. Mr. HENRY M. RIDEOUT.
- \*S28.** History and Development of English Literature in Outline. — *Five times a week.* Professor EDWIN A. GREENLAW, of Adelphi College.
- \*S45.** History of English Literature in the Nineteenth Century. — *Five times a week.* Asst. Professor COPELAND.
- \*S8.** Anglo-Saxon. — Bright's Anglo-Saxon Reader. *Five times a week.* Dr. TOM PEETE CROSS.

### FINE ARTS

- \*S1.** Drawing and Painting. — Lectures on the principles of Pure Design and of Representation. *Tu., Wed., Th., Fri.* Dr. DENMAN W. ROSS.
- This course counts toward a degree, or for the Summer School Certificate, only when either Fine Arts S2 or S3 is taken in conjunction with it.
- \*S2.** Practice in Pure Design. — Exercises and technical training. *Supervision of practice, daily except Saturday.* Dr. DENMAN W. ROSS. Fee, \$10.
- Open only to students who also take Fine Arts S1. The course counts toward a degree, or for the Summer School Certificate, only when taken with Course S1.

- \*S3. Drawing and painting in representation. — Exercises and technical training. *Supervision of practice, daily except Saturday.* Mr. MARTIN MOWER, in consultation with Dr. DENMAN W. ROSS. Fee, \$10.

Open only to students who also take Fine Arts S1. The course counts toward a degree, or for the Summer School Certificate, only when taken with Course S1.

- \*S9. The Sculpture and Painting of the Italian Renaissance. *Five times a week.* Dr. CHANDLER R. POST.

The following course in Fine Arts will be given in London, England :—

- \*S5. Turner, and the Landscape Painting of his Time. — Lectures, conferences, visits to galleries, and reports. Asst. Professor ARTHUR POPE. Fee, \$35.

Persons intending to take this course must enroll before May 15, 1911. Further information may be obtained by addressing Professor Arthur Pope, 6 Buckingham Place, Cambridge, Massachusetts.

## FRENCH

- \*S1. French for Teachers. — Reading and composition. *Five times a week.* Mr. GEORGE L. LINCOLN.

- S2. French Conversation. *Five times a week.* Mr. ROBERT E. PELLISSIER. Fee, \$10, when combined with another course in French. Open to students who can understand French when spoken slowly.

- \*S4. Second-year College French. — Reading, grammar, and composition. *Five times a week.* Dr. ERNEST H. WILKINS. Fee, \$30; for teachers in service, \$20.

This course is primarily intended for undergraduates in Harvard College deficient in their record; but is open to other persons also.

## GEOLOGY

Correspondence concerning the summer courses in Geology should be addressed to the Instructors in charge, not later than June 1, 1911. These courses are open to men only. Information about fees and expenses will be furnished on request.

- \*S5. Field Geology. — Field Work in the Rocky Mountains. *Six days a week, for five weeks, beginning early in July.* Asst. Professor JAY BACKUS WOODWORTH.

Geology 4 or its equivalent is required for admission to this course.

## COURSES FOR ADVANCED STUDENTS

- \*S20c. *Section A.* Geological and Petrographical Field Studies. *Six days a week, for five weeks or ten weeks.* Professor JOHN E. WOLFF.
- \*S20c. *Section B.* Structural or Glacial Field Work. *Six days a week, for five weeks or ten weeks.* Asst. Professor JAY BACKUS WOODWORTH.

## GERMAN

- \*S1. German for Teachers. — Grammar, composition, translation, and methods of teaching. *Five times a week.* Dr. HERMANN J. WEBER.
- S2. German Conversation. *Five times a week.* Dr. EWALD EISERHARDT. Fee, \$10, when combined with another course in German.
- \*S3. German Literature. — Dramatists of the Nineteenth Century. *Five times a week.* Dr. HERMANN J. WEBER.
- \*S4. Second-year College German. — German Prose and Poetry; grammar and practice in writing German. *Five times a week.* Mr. A. H. HERRICK. Fee, \$30; for teachers in service, \$20.
- This course is primarily intended for undergraduates in Harvard College deficient in their record; but is open to other persons also.

## GOVERNMENT

- \*S1. Civil Government; the United States, Great Britain, Germany, France, and Switzerland. — Lectures, conferences, and written reports. *Five times a week.* Dr. ARTHUR N. HOLCOMBE.
- \*S2. Municipal Government; the government of American and European cities. — Lectures, collateral reading, and written reports. *Five times a week.* Dr. ARTHUR N. HOLCOMBE.

## HISTORY

- \*S2. Ancient History for Teachers. — Lectures, reports, reading, and examination of illustrative material. *Five times a week, two lectures a day.* Asst. Professor WILLIAM S. FERGUSON. Fee, \$30.
- \*S5. American History from 1783 to 1829. — Lectures, discussions, and written reports. *Five times a week.* Professor WILLIAM MACDONALD, of Brown University.

## COURSES FOR ADVANCED STUDENTS

- \*S20i. Research in Greek and Roman History. Asst. Professor WILLIAM S. FERGUSON.

- \*S20*d*. Research in Modern European or Asiatic History. Professor ARCHIBALD CARY COOLIDGE.
- \*S20*e*. Research in American History. Professor WILLIAM MACDONALD, of Brown University.

### ITALIAN

- \*S1. Elementary Italian.—Reading, grammar, and composition. *Five times a week*. Dr. ERNEST H. WILKINS.  
This course will be given only in case five students apply.

### LATIN

- \*S1. Latin for Teachers.—Grammar; methods of teaching; Caesar, Ovid, Cicero, Virgil. *Five times a week*. Professor JOHN C. ROLFE, of the University of Pennsylvania.
- \*S2. The Life and Works of Virgil. *Five times a week*. Professor JOHN C. ROLFE, of the University of Pennsylvania.

### MATHEMATICS

- \*SA. Trigonometry.—Lectures and Problems. *Five times a week*. Mr. HARRY D. GAYLORD. Fee, \$30; for teachers in service, \$20.  
This course will be open to undergraduates deficient in their record; but special provision will also be made for any teachers who may register for the course.
- \*SB. Analytic Geometry.—Lectures and Problems. *Five times a week*. Asst. Professor EDWARD V. HUNTINGTON.
- \*S2. Calculus.—Lectures and problems. *Five times a week*. Asst. Professor EDWARD V. HUNTINGTON.  
Open to students having a knowledge of plane trigonometry and plane analytic geometry.

### METALLURGY

- \*S12. Metallography.—Lectures, laboratory work, and reading. *Five times a week, 9-12*. Mr. HERBERT M. BOYLSTON, with occasional consultation with Professor SAUVEUR. Fee, \$40.  
An elementary knowledge of metallurgy and of chemistry is required for admission to this course. The course is open to men only.

### MUSIC

- \*S1. The Appreciation of Music: Analytical Study of Masterpieces from the point of view of the listener. *Five times a week*. Asst. Professor JOHN P. MARSHALL, of Boston University.  
This course requires no technical knowledge of music.

\*S2. Elementary Harmony. *Five times a week.* Asst. Professor JOHN P. MARSHALL, of Boston University.

Open to students acquainted with the rudiments of music, and having some proficiency in pianoforte playing.

\*S3. Advanced Harmony. *Five times a week.* Asst. Professor JOHN P. MARSHALL, of Boston University.

Open to students having a knowledge of elementary harmony.

\*S4. School Music for Grade Teachers. — Lectures and practical training. *Five times a week.*

The instructor in this course will be announced later

### PHILOSOPHY

\*S1. General Introduction to Philosophy. *Five times a week.* Asst. Professor RALPH BARTON PERRY.

\*S2. Introduction to Ethics, theoretical and applied. *Five times a week.* Asst. Professor RALPH BARTON PERRY.

### COURSE FOR ADVANCED STUDENTS

\*S20. Seminary in Philosophy. Private conferences in Ethics, in Current Metaphysical Problems and Tendencies, or in the History of Philosophy. Asst. Professor RALPH BARTON PERRY.

### PHYSICAL EDUCATION

Courses in Theory. — Graded series, covering four years and including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, Methods and Practice of Teaching, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

Courses in Practice. — Graded series, covering four years and including Swedish and German Floor Work, Gymnastic Games, Field and Track Athletics, Aesthetic and Folk Dancing, Corrective Gymnastics, Playground Work, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

A special circular containing full particulars will be sent on application to the Director, Dr. Dudley A. Sargent, Harvard University, Cambridge, Mass.

### PHYSICS

\*S.B. Elementary Experimental Physics for Teachers. — Lectures, laboratory work, and problems. *Five times a week.* Mr. HARVEY C. HAYES. Fee, \$30.



## PSYCHOLOGY

- \*S1. Descriptive Psychology. — Lectures, demonstration experiments, and either laboratory or thesis work. *Five times a week.* Asst. Professor ROBERT M. YERKES.
- \*S2. Educational Psychology. — Lectures and laboratory exercises. *Five times a week.* Asst. Professor ROBERT M. YERKES.

### COURSE FOR ADVANCED STUDENTS

- \*S20. Advanced Experimental Work.  
Properly qualified persons may, by special arrangement, do advanced work in animal or human psychology under the direction of Professor ROBERT M. YERKES. For this research both library and laboratory facilities are provided. Fee, \$20, or a larger sum proportionate to the amount of instruction given.

## PUBLIC SPEAKING AND READING

For Courses S1, S3, and S4 the fee is \$20 for one course; on payment of an additional fee of \$10 the student will have the right to take regularly one additional course in Public Speaking and Reading, and to attend as an Auditor the third course.

In order to obtain credit for one half-course toward a degree a student must obtain the Certificate in two courses.

- \*S1. Vocal Technique in speaking and reading. *Five times a week.* Mr. BERTEL G. WILLARD.
- \*S3. Public Speaking. — Training in the delivery of both selected and original speeches. *Five times a week.* Asst. Professor IRVAH L. WINTER.
- \*S4. Vocal Interpretation of English Prose and Poetry. — Primarily for Teachers of English. *Five times a week.* Asst. Professor IRVAH L. WINTER.

In connection with these courses special provision will be made for teachers of public speaking and reading and other advanced students.

## SOCIOLOGY

- \*S1. Social Problems. *Five times a week.* Professor ALBERT B. WOLFE, of Oberlin College.

## SPANISH

- \*S1. Elementary Spanish. — Reading, grammar, and composition. *Five times a week.* Mr. GEORGE L. LINCOLN.  
This course will be given only in case five students apply.

AlbuZs  
1912

# OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOLUME IX

FEBRUARY 8, 1912

NUMBER 4

## ANNOUNCEMENT

OF THE

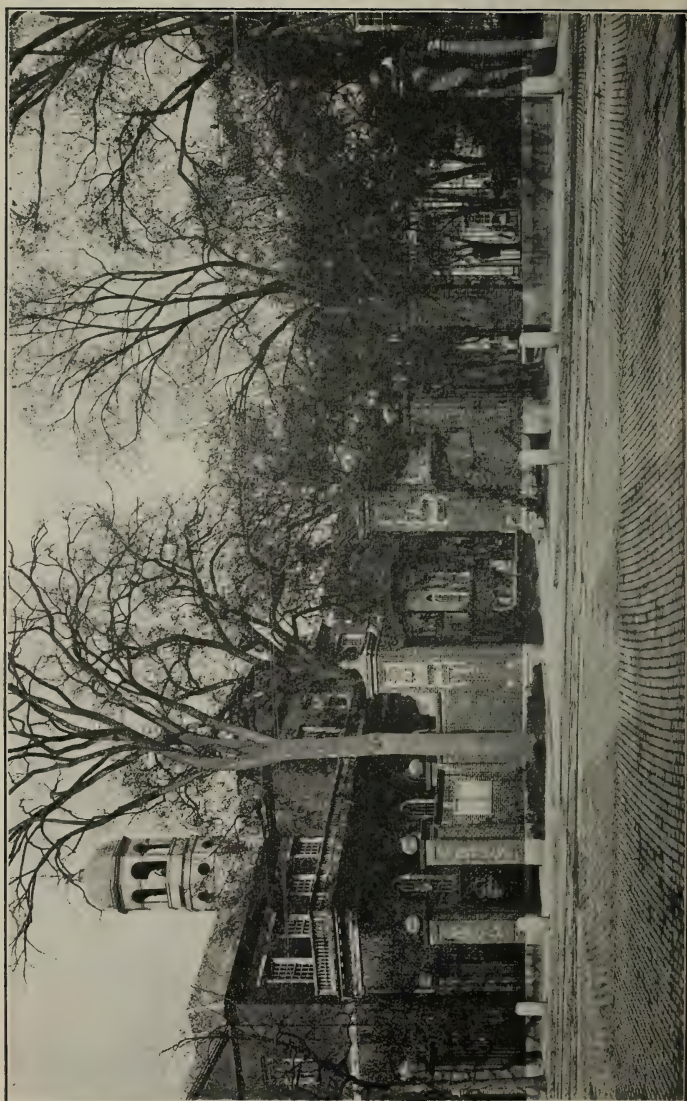
## SUMMER SCHOOL OF ARTS AND SCIENCES

JULY 2 — AUGUST 13, 1912



PUBLISHED BY HARVARD UNIVERSITY  
CAMBRIDGE, MASS.





## HARVARD UNIVERSITY

# SUMMER SCHOOL OF ARTS AND SCIENCES

TUESDAY, JULY 2, TO TUESDAY, AUGUST 13, 1912

---

## HARVARD UNIVERSITY

The history and environment of Harvard University have been described as follows: —

“Harvard University, founded as a college in 1636, was for over half a century, until the founding in 1693 of the College of William and Mary in Virginia, the only college in the country. The name of the town where it was established was changed from Newtowne to Cambridge in honor of the English university where many of the leading colonists had been educated. Although only three miles inland on the banks of the Charles, Cambridge was at that time a frontier settlement, a fact of which there is still lingering evidence in the clumps of willows, sprouts from the old stockade against the Indians, standing in a part of the college grounds.

“The College is the centre of Old Cambridge. From it westward and northward run the three principal streets, Cambridge Brattle Street, past the houses of Longfellow and Lowell; Garden Street, past the elm under which Washington first reviewed the American army, and past the Observatory and the Botanic Garden; and Massachusetts Avenue, leading to Lexington and Concord, the road along which the British soldiers retreated after the first battle of the Revolution. Near where Garden Street and Massachusetts Avenue separate, on Holmes Place, stood the house in which were the headquarters of General



Ward and of the Committee of Public Safety in 1775, and in which Dr. Oliver Wendell Holmes was born. On the neighboring stretch of green, in front of the present Harvard Law School, Samuel Langdon, President of Harvard College, that 'hotbed of sedition,' offered prayer on the evening of June 16, 1775, for the Continental troops there assembled under Colonel Prescott and about to march to Bunker Hill. Across the street is a group of buildings, Massachusetts, Harvard, and Hollis Halls, and little Holden Chapel, which date back to pre-revolutionary times. During one period of the Revolution the College was removed to Concord, and these buildings were used as quarters for the Continental Army.

"The University derives many advantages from its nearness to Boston. The Harvard College Library is in size at least the fourth, and possibly the third, library in the country, — the Library of Congress being first, — and it is a considerable advantage to have so near the University the Boston Public Library, which is second in size. Other libraries, such as the Boston Athenaeum, the State Library, the library of the Massachusetts Historical Society, the library of the American Academy of Arts and Sciences, and the libraries of the Loyal Legion and the Massachusetts Military Historical Society, furnish re-enforcement in particular fields. The great collections of paintings, sculpture, and other objects in the Boston Museum of Fine Arts offer unsurpassed opportunities of artistic education and enjoyment. Boston is an important musical centre; and is visited by many lecturers and men of note. A terminal centre for railroads and for steamship lines, it affords many and convenient means of communication with the immediate and more distant parts of the country. The highly developed park-system of Boston and of the metropolitan district is one of the great charms of the region.



“The more distant surroundings of Cambridge, the sea-coast and woods, the lake regions of Maine and the White Mountains of New Hampshire, the Berkshire Hills of Massachusetts, and Cape Cod, afford beautiful and varied scenery for the vacation periods. The steamship service to New Brunswick and Nova Scotia gives, at comparatively slight expense, ready access to a beautiful region for an economical long vacation. The neighboring coast towns of Plymouth, Salem, Marblehead, and Gloucester are reminiscent of Colonial days and are of simple, picturesque beauty.

“The general statistics of the University are as follows: — Its material resources are represented by an invested, in-  
**General** come-bearing endowment of about twenty-  
**Statistics** four million dollars, and buildings, laboratories, and museums, valued, conservatively, at twelve million dollars. The grounds for instruction and research, and for the use of students, include 80 acres in Cambridge for varied University purposes; 63 acres across the river in Boston for athletic purposes; 11 acres for the Medical School buildings in Boston; 394 acres for applied biology, arboriculture, horticulture, and allied subjects, in Jamaica Plain, a suburb of Boston; 700 acres for the Summer Engineering Camp on Squam Lake in the foothills of the White Mountains; and 2000 acres, the Harvard Forest, at Petersham, for field work in forestry; a total of more than 3200 acres. To this list may be added the Arequipa Observatory in Peru.

“On the staff of the University there are 707 officers of instruction, and 131 administrative officers, preachers, curators, etc. Not counting the students in the Summer Schools (1065), or the students in Radcliffe College (546 women), the number of students in Harvard University at the time of the issue of the Catalogue of 1911-12 was 4,203.

“The rooms of the college buildings have associations with the student days of Rufus Choate, Charles Sumner, Edward Everett, Wendell Phillips, William Fitzhugh Lee; of the historians, John Lothrop Motley, Francis Parkman, George Bancroft, and William H. Prescott; of Ralph Waldo Emerson, Henry David Thoreau, James Russell Lowell, Oliver Wendell Holmes; of Edward Everett Hale and Phillips Brooks, and many other men of note. The Harvard Memorial Society has made these associations more real and personal by posting in each room a printed list of the occupants from the beginning.”

To the students in the Harvard Summer School these old associations and surroundings of the oldest American college are offered, as well as the discipline and study of the present-day University summer courses. During the six weeks' session there is abundant opportunity, both in private walks and trips and in more elaborate excursions made under the guidance of competent scholars, to become acquainted with the scenes of historic events and the homes and familiar localities of great writers. Especially those teachers whose work includes American history and literature can find here, more than at any other place in the world, personal contact with historic places significant for this part of their daily teaching.

## THE SUMMER SCHOOL

Summer instruction has been offered at Harvard for more than forty years, a longer period than at any other university in this country. It began in a summer course in botany, organized in 1871 by Professor ASA GRAY, which was soon followed by courses in biology, chemistry, and geology, taught by Professors LOUIS AGASSIZ, JOSIAH P. COOKE, and NATHANIEL S. SHALER. The gradual en-

largement of these courses into the Summer School of Arts and Sciences was the work of Professor SHALER.

The Harvard summer courses were primarily established in order to provide University instruction for teachers, and were planned in the belief that short-term study can be made most effective by concentration on a single subject. These ideas still control the Harvard Summer School. A student here is expected to enroll regularly in only one course, and to give to that for six weeks his whole time and effort. By work so arranged a good insight can be gained into the principles, the characteristic mode of thought, the main facts, and the best methods of teaching, in an important field of knowledge. A long experience has given increasing confidence in this intensive method of summer study; and only in this way can a large subject be adequately covered in so short a time.

In pursuance of this plan, the work required in any one course will ordinarily fill a student's working time. Since the pace of work is thus more rapid than in term-time, it is possible to make the courses full equivalents of the University "half-course" of the academic year, to which they strictly correspond in standard. The method of instruction varies as may be best adapted to the nature of the subject. Daily lectures are given in each subject, in some cases two lectures each day. With the lectures are combined conferences and recitations, laboratory exercises under supervision, written papers, and reading in the libraries and from text-books.

Students are earnestly advised not to undertake regular work in more than one course, with the exceptions named below; but in addition to the student's main course it is practicable to attend the lectures only (without undertaking any other work or preparing for examination) in one additional course. For this an Auditor's Ticket may be had, on payment of an extra fee of \$10.00.

Exceptions to the above are as follows: —

Fine Arts S2 and S3 are supplementary to Fine Arts S1.

French S2 (French Conversation) is especially designed to be taken in conjunction with another course in French.

Two courses in Public Speaking and Reading may be taken together.

In Physical Education a course in Theory and a course in Practice are advantageously combined.

In Engineering certain courses are arranged so that two or more may be taken in the same summer, see pp. 21-22.

Lectures in all courses begin on Tuesday, July 2, 1912. *Except on Saturday, July 6, on which day the regular lectures and exercises will be held during the whole day, there will be no required exercises on Saturday in any courses other than those in Physical Education.*

The courses are open to both men and women, with the exception of courses in Engineering, Geology (field-work), and Metallurgy, which are for men only.

No entrance examination is required for admission to any of the courses. The Instructors may, and in many cases should, be consulted beforehand about requisite preparation or preliminary reading. Their addresses are given below.

In the courses in research and the other courses for graduate and advanced students, only competent students, and in limited number, will be accepted. Students in the research courses may attend without extra charge the lectures of any course in the same subject. For admission to any such course the Instructor's permission must be secured in advance.

The summer courses are University courses, and the same standard is set as in other Harvard courses. Nearly all are accepted, subject to the established regulations, to count as half-courses for the degrees of *Bachelor of Arts*, *Associate in Arts*, and *Bachelor of Science*. **Credit for Degrees and Certificate**      *Seminary work, research courses, and the like, are given credit for these degrees only in accordance with the specific recommendation of the Instructor in each case.*

With the previous approval of the proper authorities, advanced work in the Summer School can be counted as part of a programme



of work for the degree of *Master of Arts*, but for that, as for the degree of A.B. or S.B., continuous residence at the University of at least one academic year is required. Candidates must possess an elementary knowledge of two modern foreign languages (ordinarily French and German), and must pursue, and complete with distinction, a programme of study forming a consistent plan of work, with a definite aim and lying either in one field or in related fields. Such a programme must in every case be approved beforehand by the appropriate Division Committee of the Faculty of Arts and Sciences and by the Administrative Board of the Graduate School of Arts and Sciences.

With reference to the degree of A.M., the summer courses are especially useful to candidates who need more than a full year of resident study for the degree, or who lack some collateral work which cannot conveniently be done during the year of required residence. Moreover, students intending to carry on advanced study at Harvard in the academic year will often find much saving of time and other advantages for their work in the following winter, if they have already become familiar with the Harvard laboratories, libraries, methods, and teachers, through taking a single course in the preceding summer.

The degree of *Doctor of Philosophy* is not given on the ground of any number of courses taken, or of a stated period of study, but only for high attainment gained by long study in a special field, manifested in examinations and a thesis. For the full requirements for the Ph.D. see the *Harvard University Catalogue* for 1911-12, pp. 582-584. Students working for this degree at Harvard or elsewhere, especially while engaged in research for their theses, will be heartily welcomed at the libraries of the University, and in some departments laboratory opportunities can be offered to them. They will find in the advanced courses of the Summer School opportunity to carry on their work under the advice and supervision of instructors.

For further information with regard to the Graduate School of Arts and Sciences, and the degrees of A.M. and Ph.D., apply to G. W. ROBINSON, *Secretary*, 24 University Hall, Cambridge, Mass.

The Summer School Certificate, stating that examinations and other tests of the same grade as those required in corresponding courses in Harvard College have been fulfilled, and showing the amount of credit for a degree carried by the course, is given for each course satisfactorily completed with a grade of C, or higher.



In Physical Education a special certificate is awarded to those who complete satisfactorily the four years' course. Students are admitted to a summer course, whether they are candidates for the certificate or not.

The Summer School Certificate is usually accepted for the promotion of teachers, and for exemption from certain of the examinations required for teachers' licenses, in localities where examinations are held for these purposes. Teachers desiring to take summer courses with such ends in view are advised to inquire beforehand of the School Authorities at the place where they intend to offer the work, as to what credit will be allowed for it.

Libraries and Museums of the University are open in the summer, including the University Library and Reading-room, the special working-library in Harvard Hall, the library of Libraries and school and college text-books in Lawrence Hall, Laboratories the various departmental libraries, the Fogg Art Museum, the Germanic Museum, the Semitic Museum, the Museum of Natural History, and the Peabody Museum of Archaeology and Ethnology. The University Laboratories of Chemistry, Physics, Astronomy, Metallurgy, and Psychology are used for the courses in those subjects.

In Boston the Boston Public Library and the Museum of Fine Arts (both open daily, including Sunday) are accessible to students without charge.

Morning Prayers, conducted by representatives of various denominations, are held daily at 8.45 A.M. in Appleton Chapel. Morning For these services a choir directed by Dr. Davison, Prayers the University Organist and Choirmaster, will be organized from among the students.

Historical Excursions, seven in number, are arranged for Wednesday afternoons and Saturdays to the districts of greatest historical and literary interest in eastern Massachusetts. They are carefully planned both for enjoyment and instruction, and, as for the past eleven years, will be under the guidance of Mr. William E. Dorman and Mr. Guy Newhall, formerly Assistants in the University in the departments of History and Government.

The Excursions this year will include the following: —

Cambridge and Mt. Auburn  
 Bunker Hill and Old Boston  
 Lexington and Concord  
 Quincy, Hingham, and Nantasket Beach  
 "Whittier Land" and Andover  
 Plymouth  
 Salem and Danvers

Five visits to the Boston Museum of Fine Arts, under the guidance of Museum Docents, will be provided for limited numbers without charge.

On one of the early evenings of the session President and Mrs. LOWELL will receive the members of the Summer School at the Harvard Union.

Readings, During the session Professor COPELAND will  
 Lectures, etc. give a course of evening Lectures and Readings in English and American Literature in the New Lecture Hall.

Evening Readings from English Literature, intended especially for students in Public Speaking but open to all Summer Students, will be given by Professor WINTER.

Single Lectures are expected to be given during the Session by the following professors of the University: —

Professor ALBERT BUSHNELL HART: "The Historical Environment of Harvard University."

Professor H. LANGFORD WARREN: "The Origin and Development of Colonial Architecture in New England" (illustrated).

Professor GEORGE H. PARKER.

Professor FREDERICK J. TURNER.

A series of organ-recitals under the conduct of Dr. A. T. DAVISON, Jr., will be given.

On Thursday evening, August 8, the annual Gymnastic Exhibition by the students in the courses in Physical Education will be held in the Hemenway Gymnasium.

In addition to the above, which are all open without charge to Dramatic members of the Summer School, the COBURN Performances PLAYERS will give four performances of classic plays, either in the College Yard, or, in case of bad weather, in Sanders Theatre, as follows: —

Monday, August 5, 8.00 P.M.

Tuesday, " 6, 8.00 P.M.

Wednesday, August 7, { 2.30 P.M.  
 { 8.00 P.M.

The plays will probably be four plays of Shakespeare.

For *Summer Students* tickets to these plays will be sold at the following reduced rates:—

Single tickets, 50 cents.

Season ticket to the four plays, \$1.50.

A higher price will be charged to the public at large.

Phillips Brooks House, with parlors and a writing-room, will be open for social purposes, and various social gatherings are held there during the session of the School. On Wednesday evenings during the session the men of the Summer School are invited to meet informally at the Harvard Union. The University tennis-courts are kept in order through the summer, and at one of the University boat-houses boats for rowing on the Charles River can be hired by members of the Summer School. The electric-car lines radiating from Boston and Cambridge, and the steamboats of Boston Harbor, offer abundant opportunities for afternoon and Saturday excursions to parks, hills, woods, lakes, and the beaches and rocks of the neighboring sea-shore. Sea-bathing can be had at many points within easy reach. Private swimming-lessons from competent instructors in the pool of the Sargent Gymnasium can be arranged for at a small fee.

The climate of Cambridge during the period of the Summer School is suitable both for study and for out-of-door recreation.

The tuition-fee for a course varies from \$20 to \$30. Detailed statements will be found below in the List of Courses. In addition a registration fee of \$3 is required of every student.

An Auditor's ticket may be obtained, on the additional payment of \$10, by any registered student who has paid the full fee in one course. It will admit to the lectures only (not to laboratory or other special work) in any other courses, with the exception of the courses in Physical Education and those in Public Speaking and Reading.

No reduction of fee will be allowed for late entrance, or for withdrawal, except on account of illness or other like serious and unavoidable cause. In no case will a reduction be allowed when the student is present during more than half the term.

*Money to meet expenses should be brought in cash, bank drafts, cashier's checks, or money orders. Checks or drafts should be drawn on Boston or New York banks in order to save cost of exchange. Private checks are not negotiable.*

Comfortable furnished rooms within a half-mile of the University are offered for rent in great abundance at prices ranging from \$1 to \$4 per week for a single room, and \$2.50 to \$7 per week for a suite of rooms, including care of room, light, and the use of a bathroom. Many of the single rooms and suites are suitable for two persons. Complete apartments (furnished) can be hired at reasonable rates by those who wish to undertake light housekeeping.

Table board can be had in private boarding-houses or in public restaurants, at prices ranging from \$4 to \$8 per week.

A list of lodgings and boarding-houses will be sent on application to the Secretary of the Summer School, University Hall, Cambridge, Mass., but it will usually be found more satisfactory to engage board and rooms after arrival in Cambridge.

The average necessary expenses in Cambridge, for the six weeks of the Summer School, not including travelling expenses, may be estimated at \$80-\$90, but with great economy a smaller amount (not less than \$70) can be made to suffice.

The only railroad stations for Harvard University are those in Boston, from which Cambridge is reached by electric cars. Baggage should be sent from Boston by baggage-transfer or express.

By direct steamer lines Boston may be reached, cheaply and comfortably, as follows: —

From *New York*, by the Fall River Line, leaving New York daily at 5 P.M.; by the Providence Line, leaving daily at 5 P.M.; and by the Joy Line (via Providence), leaving every week-day at 5.30 P.M.;

From *Philadelphia*, *Baltimore*, and *Norfolk, Va.*, by the lines of the Merchants' and Miners' Transportation Co., with frequent sailings (on these steamers reduced rates are given to students);

From *Savannah*, by the steamers of the Ocean Steamship Co., sailing twice a week;

From *Charleston, S.C.*, and *Jacksonville, Fla.*, by the Clyde Line, and from *Mobile* and *Galveston* by the Mallory Line, both sailing to New York, where good connection is made for Boston by either rail or steamer.

The Summer School is thus conveniently accessible to students from the more distant as well as the nearer Southern States.

From *Portland, Rockland, Bangor, and Eastport, Me., and St. John, N.B.,* and from *Yarmouth, N.S. (for Digby and Halifax),* the steamers of the Eastern Steamboat Co. and the Dominion Atlantic Railway sail either daily or several times a week, and from *Halifax and Prince Edward Island* there are weekly sailings by the Plant Line.

Before being enrolled as a member of a course each student is required to register in person at the OFFICE OF THE SUMMER SCHOOL in Massachusetts Hall, and to pay all required fees and charges at the BURSAR'S OFFICE in Dane Hall.

Registration, etc. Students should register on or before Monday, July 1, since lectures in all courses will begin promptly at the announced hours on Tuesday morning, July 2. It is of the greatest importance that all students should be present at the first meeting of their classes.

The places of meeting of the several courses will be announced on the bulletin boards.

Regular exercises will be held on Saturday, July 6, both morning and afternoon, but not on the succeeding Saturdays of the session.

Final examinations in all courses will be held on Monday, August 12, and Tuesday, August 13, 1912.

The following students, resident in various parts of the United States, and in Canada and Porto Rico, were in attendance at the Summer School in 1911 and have given their names as willing to be consulted in case any prospective student wishes special information with regard to the courses, or as to such general matters as transportation to Boston, accommodations in Cambridge, etc.

ALABAMA	
Mae Eanes,	207 St. Joseph St., Mobile.
CALIFORNIA	
Charles M. Lyon,	407 E. Seventh St., Long Beach.
COLORADO	
D. Shaw Duncan,	University Park.
Mrs. C. A. Upson,	121 Linden St., Fort Collins.
DELAWARE	
G. E. Dutton,	Delaware College, Newark.
DISTRICT OF COLUMBIA	
Ruth E. Brock,	940 K St., N. W., Washington.
FLORIDA	
W. Glenn Terrell,	Webster.



GEORGIA	
Oreola M. Cheves,	Montezuma.
ILLINOIS	
John R. Pelsma,	Normal.
Jennie M. Whittemore,	114 Kedzie St., Evanston.
INDIANA	
Harlem E. Densford,	Crothersville.
Penelope V. Kern,	115 E. Kruzan St., Brazil.
IOWA	
Bartholomew V. Crawford,	Mt. Vernon.
KENTUCKY	
W. W. H. Mustaine,	State University, Lexington.
Sophia E. Hyatt,	1017 First St., Louisville.
MARYLAND	
Mary A. Foley,	1613 Baker St., Baltimore.
MICHIGAN	
Marie A. Winsor,	225 High St., Marshall.
MINNESOTA	
Jane A. Howe,	137 E. Grant St., Minneapolis.
NEBRASKA	
Emma E. Morrell,	719 So. 16th St., Lincoln.
NEW JERSEY	
Louise F. Pinchon,	105 Albion Pl., Atlantic City.
NEW YORK	
Mrs. Frank Lombard,	24 Russell Ave., Buffalo.
Anna M. Richman,	1553 E. 14th St., Brooklyn.
NORTH CAROLINA	
Isham F. Witherington,	Horner Military School, Oxford.
OHIO	
Isaac F. Patterson,	4106 E. 91st St., Cleveland.
Florence S. Tuckerman,	Youngstown.
OREGON	
J. G. Arbuthnot,	Oregon Agricultural College, Corvallis.
PENNSYLVANIA	
Ella Hanlon,	934 Mellon St., Pittsburgh.
R. C. Woodard,	Kennett Square.
SOUTH CAROLINA	
Caroline F. Tupper,	College for Women, Columbia.
TENNESSEE	
Herman Staab,	Sewanee Military Academy, Sewanee.
Mary V. Little,	576 Linden Ave., Memphis.
TEXAS	
Eugenia Millican,	Mt. Pleasant.
UTAH	
Hazel B. Stevens,	633 So. 8 E St., Salt Lake City.
Emma Dougall,	Springville.
VIRGINIA	
Mary M. Galt,	Randolph-Macon Woman's College, Lynchburg
WEST VIRGINIA	
Morris K. Turner,	Charleston High School, Charleston.
Augustus S. Lee,	Evelyn.

## WISCONSIN

Kenneth G. Smith,

University of Wisconsin, Madison.

## CANADA

Lawrence E. Brownell,

Dalhousie College, Halifax, N. S.

John A. Macdonald,

University of Saskatchewan, Saskatoon,  
Saskatchewan.

## PORTO RICO

Charles E. Miner,

Arroyo.

Gertrude E. Murray,

Ponce.

Undergraduates in Harvard College are not permitted in any one summer to count more than one of the summer courses given in Cambridge (except courses in Shopwork), obtaining credit for it as a "half-course."

Undergraduates wishing to take a summer course for the purpose of making up a failure in college will be admitted to the following courses *only*:—

French S4 (Second-year College French).

German S4 (Second-year College German).

Mathematics SK (Trigonometry).

Engineering courses given at the Engineering Camp.

Undergraduates from other colleges taking summer work in order to make up a deficiency will be admitted to other courses than the above-mentioned only by special permission from Dean ROPES.

The total enrolment of the Summer School in 1911 was 787 persons, of whom 51 per cent were men and 49 per cent women.

Attendance 72 per cent of the students enrolled in general courses were teachers and school officers. The residence of the students enrolled in general courses was as follows:—

New England States . . . . .	53 per cent
Middle States . . . . .	19 " "
Southern States . . . . .	13 " "
North Central States . . . . .	10 " "
Western States . . . . .	1 " "
Foreign Countries . . . . .	4 " "

The List of Students in the Summer School of 1911, arranged by courses, will be sent on application.

Further information and advice will be gladly furnished on application to the SECRETARY OF THE SUMMER SCHOOL,

19 University Hall,

Cambridge, Mass.

NOTE. — During the Session the Office of the Summer School is in Massachusetts Hall.

---

OTHER SUMMER COURSES IN HARVARD UNIVERSITY.

For information about

The Harvard Summer School of Medicine, June 1–October 1, 1912, apply to the

DIRECTOR OF THE HARVARD SUMMER SCHOOL OF MEDICINE,  
Harvard Medical School,  
Boston, Mass.

For information about

Graduate Summer Courses in Applied Biology,  
in Architecture,  
in Mining,

apply to the DEAN OF THE GRADUATE SCHOOL OF APPLIED SCIENCE,  
16 University Hall,  
Cambridge, Mass.

OFFICERS OF THE  
SUMMER SCHOOL OF ARTS AND SCIENCES  
1912

---

PRESIDENT

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., Ph.D.

ADMINISTRATIVE BOARD

JAMES HARDY ROPES, A.B., D.D., *Hollis Professor of Divinity and  
Dexter Lecturer on Biblical Literature*, DEAN.

JOSIAH ROYCE, Ph.D., LL.D., Litt.D., *Professor of the History of Philosophy  
and Walter Channing Cabot Fellow*.

CLIFFORD HERSCHEL MOORE, Ph.D., *Professor of Latin*.

GEORGE WASHINGTON PIERCE, S.B., Ph.D., *Assistant Professor of Physics*.

HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineer-  
ing, and Director of the Engineering Camp*.

WILLIAM BENNETT MUNRO, Ph.D., LL.B., *Assistant Professor of Govern-  
ment*.

LOUIS ALLARD, Agrégé-des-lettres, *Assistant Professor of French*.

SECRETARY

GERALDINE S. PROUTY, A.B.

INSTRUCTORS

DENMAN WALDO ROSS, Ph.D., *Lecturer on the Theory of  
Design*, 24 Craigie St.

DUDLEY ALLEN SARGENT, A.M., M.D., S.D., *Director of  
the Hemenway Gymnasium*, 27 Everett St.

JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography and  
Mineralogy, and Curator of the Mineralogical Museum*,  
University Museum

CHARLES TOWNSEND COPELAND, A.B., *Assistant Professor  
of English*, Hollis 15

EDWARD RUSSELL MARKHAM, *Instructor in Shopwork*, 8 Ellsworth Ave.

WILLIAM FOGG OSGOOD, Ph.D., LL.D., *Professor of  
Mathematics*, 74 Avon Hill St.

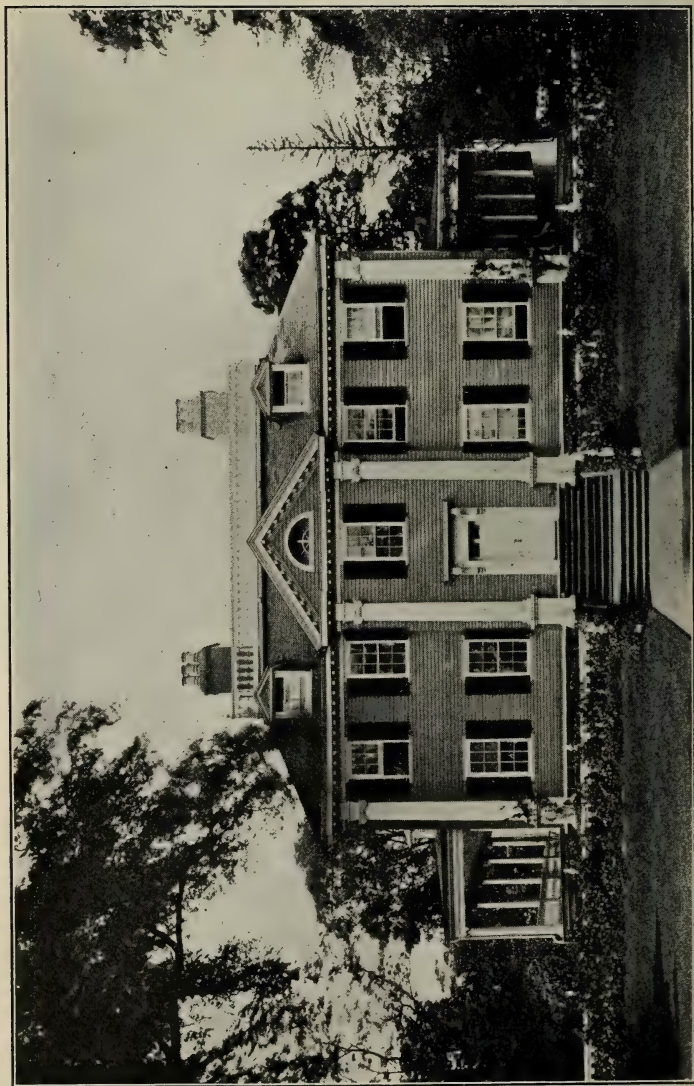
HERMANN JULIUS WEBER, Ph.D., *Instructor in German*, 43 Lexington Ave.

IRVAH LESTER WINTER, A.B., *Assistant Professor of  
Public Speaking*, Hubbard Park



THE COLLEGE YARD

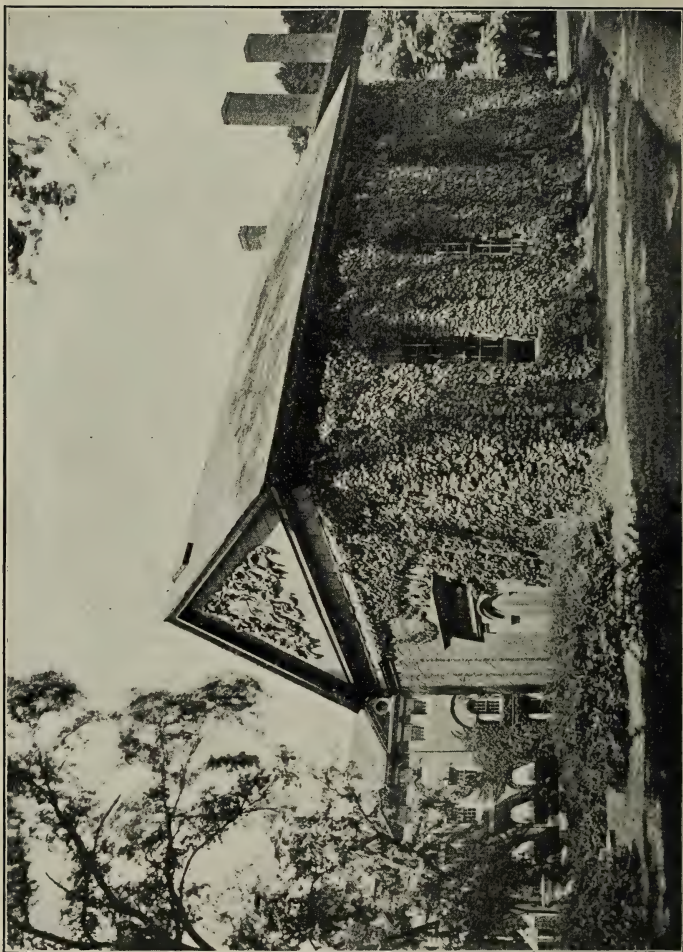




THE HOUSE OF HENRY WADSWORTH LONGFELLOW



MEMORIAL HALL TOWER AND THE DOUBLE GATE  
OF THE CLASSES OF 1887 AND 1888



HOLDEN CHAPEL, 1744, AND PHILLIPS BROOKS HOUSE, 1899



- WALTER RAYMOND SPALDING, A.M., *Assistant Professor of Music*, 5 Berkeley Place
- WILLIAM ALLAN NEILSON, Ph.D., *Professor of English*, 34 Kirkland St.
- KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Instructor in English*, 19 Ash St.
- MARTIN MOWER, *Instructor in Fine Arts*, 35 Mellen St.
- HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineering, and Director of the Engineering Camp*, 6 Clement Circle
- JAY BACKUS WOODWORTH, S.B., *Assistant Professor of Geology*, 51 Oxford St.
- GREGORY PAUL BAXTER, Ph.D., *Assistant Professor of Chemistry*, Boylston 2
- GEORGE HENRY CHASE, Ph.D., *Assistant Professor of Classical Archaeology, and Curator of Classical Antiquities*, 11 Kirkland Road
- WILLIAM SCOTT FERGUSON, Ph.D., *Assistant Professor of History*, 17 Chauncy St.
- GEORGE LUTHER LINCOLN, A.M., *Instructor in Romance Languages*, 2000 Commonwealth Ave., Boston
- ROBERT MEARNS YERKES, Ph.D., *Assistant Professor of Comparative Psychology*, 3 Fuller Place
- LOUIS JOSEPH ALEXANDER MERCIER, A.M., *Instructor in French*, 2 Avon St.
- EDGAR OSCAR PARKER, *Assistant in Drawing*, 429 Huron Ave.
- ERNEST HATCH WILKINS, Ph.D., *Instructor in Romance Languages*, 58 Shepard St.
- CECIL ALBERT MOORE, A.M., *Assistant in English*, Grays 43
- GEORGE SHANNON FORBES, Ph.D., *Instructor in Chemistry*, 51 Thornton St., Roxbury
- CLIFTON HARLAN PAIGE, B.A.S., *Instructor in Civil Engineering*, Divinity 19
- HERBERT MELVILLE BOYLSTON, S.B., A.M., *Assistant in Metallurgy and Metallography*, 55 Claremont Ave., Arlington Heights
- ASBURY HAVEN HERRICK, A.M., *Instructor in German*, 34 Maple Ave.
- GEORGE PLIMPTON ADAMS, A.M. (*Assistant Professor of Philosophy in the University of California*), *Lecturer on Philosophy*, 18 Ash St.
- JOHN CHARLES DUNCAN, Ph.D., *Instructor in Astronomy*, 69 Wendell St.
- ARCHIBALD THOMPSON DAVISON, Jr., Ph.D., *Organist and Choir-master, and Assistant in Music*, Holyoke 9

- ARTHUR NORMAN HOLCOMBE, Ph.D., *Instructor in Government*, 21 Follen St.  
 HARRY DAVIS GAYLORD, S.B., *Instructor in Mathematics*, 98 Hemenway St., Boston  
 HARVEY CORNELIUS HAYES, Ph.D., *Fellow for Research and Assistant in Physics*, 262 Upland Road  
 GEORGE LESLIE KELLEY, S.B., Ph.D., *Instructor in Chemistry*, 11 Chester Place, W. Somerville  
 HOWARD JAMES SAVAGE, A.M., *Instructor in English*, 26 Irving St.  
 HENRY ROBINSON SHIPHERD, A.B., *Assistant in English*, formerly *Head of the Department of English*, Francis W. Parker School, Chicago, Ill. 26D Shepard St.  
 GEORGE RALPH BUNKER, A.B., *Instructor in Public Speaking*, 84 Prescott St.
- 

- EPHRAIM DOUGLASS ADAMS, Ph.D., *Professor of History in Leland Stanford, Jr., University*, Stanford University, California  
 GARRETT DROPPERS, Ph.D., *Orrin Sage Professor of Political Economy in Williams College*, Williamstown  
 RAYMOND MACDONALD ALDEN, Ph.D., *Professor of English in the University of Illinois*, Urbana, Illinois  
 WILLIAM HEALY, A.B., M.D., *Director of the Juvenile Psychopathic Institute, Chicago*, 4038 Clarendon Ave., Chicago, Illinois  
 ERNEST CARROLL MOORE, Ph.D., *Professor of Education in Yale University*, New Haven, Connecticut  
 MEYER BLOOMFIELD, A.B., *Director of the Vocation Bureau*, 6 Beacon St., Boston  
 ARTHUR STANLEY PEASE, Ph.D., *Assistant Professor of Classics in the University of Illinois*, Urbana, Illinois  
 ROBERT EDOUARD PELLISSIER, S.B., A.M., *Instructor in Romanic Languages in Leland Stanford, Jr., University*, Stanford University, California  
 DANIEL WOLFORD LARUE, Ph.D., *Professor of Psychology in the Stroudsburg Normal School*, Stroudsburg, Pennsylvania

#### IN CHARGE OF HISTORICAL EXCURSIONS

- WILLIAM EDWIN DORMAN, A.B., LL.B., formerly *Assistant in History*, Lynn  
 GUY NEWHALL, A.B., LL.B., formerly *Assistant in Government*, Lynn



## LIST OF COURSES

The courses in the following list indicated by an asterisk (\*) are accepted, under varying conditions, for credit toward a degree in Harvard University. This includes all the courses except French S2 and the courses in Physical Education. In most instances the accepted courses count toward the degrees of A.B., A.A., and S.B., but in some cases toward the degree of A.A. only. Research and seminary courses can be counted toward a degree only on the special recommendation of the instructor. The detailed regulations about the counting of courses for degrees are stated in the fuller descriptions of the several departments, which will be sent on application.

The fee for each course is \$20, except in the cases specially indicated below.

### ASTRONOMY

- \*S1. Elementary Astronomy. — Lectures, laboratory work, and observations. *Five times a week.* Dr. JOHN C. DUNCAN. Fee, \$30.  
This course will be given only in case five students apply.

### CHEMISTRY

Fee, \$25 for each course, with additional charge of \$10 for materials, and a deposit for breakage.

- \*S1. Elementary Theoretical and Descriptive Chemistry. — Lectures and laboratory work. *Five times a week.* Asst. Professor GREGORY P. BAXTER.

This course is adapted to meet the requirement for admission to the Harvard Medical School.

- \*S2. Organic Chemistry. — Lectures and laboratory work. *Five times a week.* Dr. GEORGE L. KELLEY.

Open to students having a good knowledge of general inorganic chemistry.

This course is adapted to meet the requirement for admission to the Harvard Medical School.

- \*S3. Qualitative Analysis. — Lectures and laboratory work. *Five times a week.* Asst. Professor GREGORY P. BAXTER.

Open to students having a knowledge of elementary descriptive chemistry.

This course is adapted to meet the requirement for admission to the Harvard Medical School.

\*S6. Physical Chemistry. — Lectures and laboratory work. *Five times a week.* Dr. GEORGE SHANNON FORBES.

Open to students having a knowledge of elementary chemistry and physics.

#### COURSES FOR ADVANCED STUDENTS

\*S20f. Research in Inorganic and Physical Chemistry. Asst. Professor GREGORY P. BAXTER.

\*S20h. Research in Physical Chemistry. Dr. GEORGE SHANNON FORBES.

#### ECONOMICS

\*S1. Principles of Economics. — Lectures, conferences, and reading. *Five times a week.* Professor GARRETT DROPPERS, of Williams College.

This course will be mainly occupied with the fundamental questions of the production, distribution, and consumption of wealth, but will also take up such special problems as labor conditions, banking, tariff, and taxation.

#### EDUCATION

\*S2a. General Principles of Education. — Survey of problems in the theory and practice of education; critical examination of contemporary doctrines; discussion of guiding principles in teaching and school management. — Lectures, reading, investigation, and reports. *Five times a week.* Professor ERNEST C. MOORE, of Yale University.

\*S3a. Organization and Administration of Schools and School Systems. Programmes (courses) of study; duties and opportunities of superintendents and principals. — Lectures, reports, and discussions. *Five times a week.* Professor ERNEST C. MOORE, of Yale University.

\*S7. Vocational Guidance. — The duties and equipment of Teachers as Vocational Counsellors; the theory and practice of vocational guidance. — Lectures, reading, and conferences. *Five times a week.* Mr. MEYER BLOOMFIELD, Director of the Vocation Bureau of Boston.

The course will be limited to fifty members. Students will be admitted in order of application to the Dean, provided they have *previously* consulted the Instructor.

*For further information address Mr. Meyer Bloomfield, 6 Beacon Street, Boston, Massachusetts.*

## ENGINEERING

## SURVEYING AND MECHANICS

The following courses will be given at the Harvard Engineering Camp, Squam Lake, N. H. Men only can be admitted.

For men not members of Harvard College the fees charged in the courses in 1911 were as follows:—

Engineering 4a . . . . .	\$86	Engineering 5b } . . . . .	\$48 each
“ 4c . . . . .	54	“ 5e }	
“ 4d . . . . .	75		

The precise fees to be charged for 1912 cannot be determined until later in the spring of 1912. The fee covers board and lodging at the Engineering Camp, as well as instruction and laboratory fee, but not charges for damage.

\*4a hf. Surveying. — Use of instruments; plane and topographical surveying; levelling; map drawing and field practice. *Half-course. Five weeks, beginning Friday, June 21.* Asst. Professor H. J. HUGHES, and assistants.

Open to students who have studied plane trigonometry.

This course is especially adapted for students of Civil Engineering, Geology, Mining and Metallurgy, Landscape Architecture, and Forestry, and is recommended for other technical students.

\*4c hf. Geodetic Surveying. — Triangulation; levelling; topography; U. S. Government Survey methods. *Half-course. Four weeks, beginning at the close of Course 4a.* Asst. Professor H. J. HUGHES, and assistants.

Open to students who have passed satisfactorily in Course 4a, and have a knowledge of spherical trigonometry and elementary astronomy.

This course is especially adapted for students of Civil Engineering who intend to enter Government Survey Work.

\*4d. Railroad Engineering (first course). — Railroad curves and location; field and office practice. *Six weeks, beginning at the close of Course 4a.* Asst. Professor H. J. HUGHES, Mr. C. H. PAIGE, and assistants.

Open to students who have passed satisfactorily in Course 4a or its equivalent.

This course is especially adapted for students of Civil Engineering, Mining and Metallurgy, and for any student whose future work will require a knowledge of the principles of curves, grades, and earthwork computation.

*\*5b hf. Elementary Statics. — Graphic and algebraic methods. Three weeks, beginning Friday, June 21.*

Open to students who have a satisfactory knowledge of trigonometry.

This course is necessary for the advanced courses in applied mechanics.

*\*5e hf. Elementary Kinematics and Kinetics. Three weeks, beginning at the close of Course 5b.*

Open to students who have passed satisfactorily in Course 5b or an equivalent, and who have a satisfactory knowledge of the calculus.

This course is necessary for the advanced courses in applied mechanics.

*For further information address Professor H. J. Hughes, 114 Pierce Hall, Cambridge, Massachusetts.*

#### SHOPWORK

The courses in Shopwork, given in the shops of the Rindge Technical School, Cambridge, are specially adapted for teachers of Manual Training, and those preparing for that work. The laboratory work is supplemented by lectures and by visits to workshops in the vicinity of Cambridge. Men only are admitted. All four courses may be taken in one summer.

*\*10a. Chipping, Filing, and Fitting. — Use of hand tools. Fitting by hand. Study of the metals in practical working. Lectures and laboratory work. Ninety hours. Four and one-half weeks, beginning about June 12. Mr. EDWARD R. MARKHAM. Fee, \$25.*

*\*10b. Blacksmithing. — Use of tools. Forging, welding, tool-dressing, and tempering. Lectures and laboratory work. Ninety hours. Four and one-half weeks, beginning about June 12. Mr. EDWARD R. MARKHAM. Fee, \$25.*

The hours of Courses 10a and 10b are so arranged that both can be taken in the same summer.

*\*10c. Pattern Making and Foundry Practice. — Use of wood-working tools. Casting in iron and alloys. Lectures and laboratory work. Ninety hours. Four and one-half weeks, beginning about July 15. Mr. EDWARD R. MARKHAM. Fee, \$25.*

*\*10e. Machine Shop Practice. — Use of machine tools. Construction of parts of machinery. Finishing and assembling parts. Lectures and laboratory work. Ninety hours. Four and one-half weeks, beginning about July 15. Mr. EDWARD R. MARKHAM. Fee, \$25.*

Courses 10c and 10e can both be taken at the same time.

*For further information address Professor F. L. Kennedy, Pierce Hall, Cambridge, Massachusetts.*

## ENGLISH

\*S A. English Composition and Methods of Teaching. — Lectures, recitations, written exercises, and conferences. *Five times a week.* Mr. HENRY ROBINSON SHIPHERD.

\*S B. English Composition (second course). — Lectures, daily themes, longer themes, and conferences. *Five times a week.* Mr. HOWARD J. SAVAGE.

\*S C. English Composition (third course). — Lectures, short themes, longer themes, and conferences. *Five times a week.* Professor RAYMOND M. ALDEN, of the University of Illinois.

Teachers of English composition, and advanced students looking forward to publication, may arrange with the Instructor in this course for such modification of the general programme as will serve their special needs.

\*S70. Shakespeare. — Lectures on the works of Shakespeare and study of the text. *Five times a week.* Professor WILLIAM A. NEILSON.

\*S45. History of English Literature in the Nineteenth Century. — *Five times a week.* Asst. Professor COPELAND.

\*S16. Introduction to the Study of English Poetry. — The Forms of English Poetry and the History of Poetic Theory. *Five times a week.* Professor RAYMOND M. ALDEN, of the University of Illinois.

\*S3. Anglo-Saxon. — Bright's Anglo-Saxon Reader. *Five times a week.* Dr. KENNETH G. T. WEBSTER.

## FINE ARTS

\*S1. Drawing and Painting. — Lectures on the principles of Pure Design and of Representation. *Tu., Wed., Th., Fri.* Dr. DENMAN W. ROSS. Fee, \$10.

This course counts toward a degree, or for the Summer School Certificate, only when either Fine Arts S2 or S3 is taken in conjunction with it. It is especially adapted for Teachers of Drawing in schools.

\*S2. Practice in Pure Design. — Exercises and technical training. *Supervision of practice, daily except Saturday.* Dr. DENMAN W. ROSS, assisted by Mr. E. O. PARKER. Fee, \$15.

Open only to students who also take Fine Arts S1. The course counts toward a degree, or for the Summer School Certificate, only when taken with Course S1.



- \*S3. Drawing and painting in representation. — Exercises and technical training. *Supervision of practice, daily except Saturday.* Mr. MARTIN MOWER, in consultation with Dr. DENMAN W. ROSS. Fee, \$15.

Open only to students who also take Fine Arts S1. The course counts toward a degree, or for the Summer School Certificate, only when taken with Course 1.

- \*S4. Greek Art. — The history of architecture, sculpture, and painting in Greek lands, with some account of the lesser arts. — Lectures, conferences, written papers, and systematic use of the Boston Museum of Fine Arts. *Five times a week.* Asst. Professor GEORGE H. CHASE.

## FRENCH

- \*S1. French for Teachers. — Reading and composition. *Five times a week.* Mr. GEORGE L. LINCOLN.

This course is suited to students having some proficiency in French. The instructor will cover rapidly, for the benefit of teachers, the college entrance requirements in French. Constant practice will be given in the translation of rather difficult authors and in composition.

- S2. French Conversation. *Five times a week.* Mr. ROBERT E. PELLISSIER, of Leland Stanford, Jr., University. Fee, \$10, when combined with another course in French; \$20, when taken alone.

Open to students who can understand French when spoken slowly.

- \*S3. French Literature. — General view of the history of French literature. — Lectures, explanation of text, reading. *Five times a week.* Mr. LOUIS J. A. MERCIER.

Ability to read French will be necessary for this course.

- \*S4. Second-year College French. — Reading, grammar, and composition. *Five times a week.* Dr. ERNEST H. WILKINS. Fee, \$30; for teachers in service, \$20.

This course is primarily intended for undergraduates in Harvard College wishing to make up a college deficiency who have passed in elementary French for admission, but is open to other persons also.

## GEOLOGY

Correspondence concerning the summer courses in Geology should be addressed to the Instructors in charge, not later than June 1, 1912. These courses are open to men only. Information about fees and expenses will be furnished on request.

- \*S5. Field Geology. — Field Work in the Rocky Mountains. *Six days a week, for five weeks, beginning early in July.* Asst. Professor J. B. WOODWORTH.

Geology 4 or its equivalent is required for admission to this course.

#### COURSES FOR ADVANCED STUDENTS

- \*S20c. Section A. Geological and Petrographical Field Studies. *Six days a week, for five weeks or ten weeks.* Professor JOHN E. WOLFF.

- \*S20c. Section B. Structural or Glacial Field Work. *Six days a week, for five weeks or ten weeks.* Asst. Professor J. B. WOODWORTH.

#### GERMAN

- [\*S1. German for Teachers. — Grammar, composition, translation, and methods of teaching. *Five times a week.*]

Omitted in 1912; will probably be given in 1913.

- \*S3. German Literature. — Dramatists of the Nineteenth Century. *Five times a week.* Dr. HERMANN J. WEBER.

In this course different works are read in alternate years, so that it can be counted when taken a second time. Opportunity will be given for practice in German conversation.

- \*S4. Second-year College German. — German Prose and Poetry; grammar and practice in writing German. *Five times a week.* Mr. A. H. HERRICK. Fee, \$30; for teachers in service, \$20.

This course is primarily intended for undergraduates in Harvard College wishing to make up a college deficiency who have passed in elementary German for admission; but is open to other persons also.

#### GOVERNMENT

- \*S1. Civil Government; the United States, Great Britain, Germany, France, and Switzerland, with special reference to current problems. — Lectures, conferences, and written reports. *Five times a week.* Dr. ARTHUR N. HOLCOMBE.

- \*S2. Municipal Government; the government of American and European cities. — Lectures, collateral reading, and written reports. *Five times a week.* Dr. ARTHUR N. HOLCOMBE.

This course will be given only in case ten students apply.

## HISTORY

- \*S2. Ancient History for Teachers. — Lectures, reports, reading, and examination of illustrative material. *Five times a week, two lectures a day.* Asst. Professor WILLIAM S. FERGUSON. Fee, \$30.

In this course Greek history and Roman history are both included in a general historical survey of the development of ancient civilization to the reign of Justinian.

- \*S1. History of England from 1689 to the present time. — Lectures, discussion, and written reports. *Five times a week.* Professor EPHRAIM D. ADAMS, of Leland Stanford, Jr., University.
- \*S5. American History from 1830 to the present time. — Lectures, discussions, and written reports. *Five times a week.* Professor EPHRAIM D. ADAMS of Leland Stanford, Jr., University.

## COURSES FOR ADVANCED STUDENTS

- \*S20i. Research in Greek and Roman History. Asst. Professor WILLIAM S. FERGUSON.
- \*S20e. Research in American History. Professor EPHRAIM D. ADAMS of Leland Stanford, Jr., University.

## ITALIAN

- \*S1. Elementary Italian. — Reading, grammar, and composition. *Five times a week.* Dr. ERNEST H. WILKINS.
- This course will be given only in case five students apply. •

## LATIN

- \*S1. Latin for Teachers. — Grammar; methods of teaching; Caesar, Ovid, Cicero, Virgil. *Five times a week.* Asst. Professor ARTHUR STANLEY PEASE, of the University of Illinois.
- \*S2. The Life and Works of Virgil. *Five times a week.* Asst. Professor ARTHUR STANLEY PEASE, of the University of Illinois.

## MATHEMATICS

- \*S K. Logarithms and Trigonometry. — Lectures and Problems. *Five times a week.* Mr. HARRY D. GAYLORD. Fee, \$30.
- This course is intended for undergraduates in Harvard College wishing to make up a college deficiency.

**\*SM.** Logarithms and Trigonometry, with special reference to the needs of teachers of high-school mathematics. — Lectures and problems. *Five times a week.* Mr. HARRY D. GAYLORD.

On three days of each week the practical exercises of this course will usually be held conjointly with those of Course SK.

**\*S2.** Calculus. — Lectures and problems. *Five times a week.* Professor WILLIAM F. OSGOOD.

Open to students having a knowledge of plane trigonometry and plane analytic geometry.

### METALLURGY

**\*S12.** Metallography. — Lectures, laboratory work, and reading. *Five times a week, 9-12.* Mr. HERBERT M. BOYLSTON, with occasional consultation with Professor SAUVEUR. Fee, \$40.

An elementary knowledge of metallurgy and of chemistry is required for admission to this course. The course is open to men only.

### MUSIC

**\*S1.** The Appreciation of Music: Analytical Study of Masterpieces from the point of view of the listener. *Five times a week.* Asst. Professor WALTER R. SPALDING.

This course requires no technical knowledge of music.

**\*S2.** Elementary Harmony. *Five times a week.* Dr. ARCHIBALD T. DAVISON, Jr.

Open to students acquainted with the rudiments of music, and having some proficiency in pianoforte playing.

**\*S3.** Advanced Harmony. *Five times a week.* Asst. Professor WALTER R. SPALDING.

Open to students having a knowledge of elementary harmony.

### PHILOSOPHY

**\*S1.** General Introduction to Philosophy. *Five times a week.* Asst. Professor GEORGE P. ADAMS, of the University of California.

### PHYSICAL EDUCATION

Courses in Theory. — Graded series, covering four years and including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, Methods and Practice of Teaching, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

Courses in Practice. — Graded series, covering four years and including Swedish and German Floor Work, Gymnastic Games, Field and Track Athletics, Aesthetic and Folk Dancing, Corrective Gymnastics, Playground Work, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

*A special circular containing full particulars will be sent on application the Director, Dr. Dudley A. Sargent, Harvard University, Cambridge, Mass.*

## PHYSICS

- \*S B. Elementary Experimental Physics for Teachers. — Lectures, laboratory work, and problems. *Five times a week.* Dr. HARVEY C. HAYES. Fee, \$30.

## PSYCHOLOGY

- \*S1. Descriptive Psychology. — Lectures, reading, class experiments, and reports. *Five times a week, 9-10.30.* Asst. Professor ROBERT M. YERKES and Dr. DANIEL W. LARUE.
- \*S2. Educational Psychology. — Lectures, reading, experimental exercises, and reports. *Five times a week, 11-12.30.* Asst. Professor ROBERT M. YERKES and Dr. DANIEL W. LARUE.
- \*S3. The Psychology and Practical Training of the Mentally and Morally Abnormal, with special reference to Children. — Lectures, clinics, and reports. *Five times a week; lectures at 10, clinics at hours to be arranged.* Dr. WILLIAM HEALY, Director of the Juvenile Psychopathic Institute, Chicago, Ill.

This course is intended to be of service to teachers, but also to social workers, probation officers, and officials in public institutions. It will be limited to twenty-five members, who must apply beforehand. Acquaintance with elementary psychology is required. Students will be admitted by the Dean, on the recommendation of the Instructor.

*For further information address Dr. William Healy, Juvenile Psychopathic Institute, Chicago, Ill.*

## COURSE FOR ADVANCED STUDENTS

- \*S20. Advanced Work in Psychology.

Properly qualified persons may, by special arrangement, carry on advanced work in Comparative or Human Psychology, under the direction of Professor ROBERT M. YERKES; in Educational Psychology, under Dr. DANIEL W. LARUE; or in the Psychology of the Mentally and Morally Abnormal, under Dr. WILLIAM HEALY. For students who desire to undertake research, both library and laboratory facilities are provided. Fee, \$20, or a larger sum proportionate to the amount of instruction given.



## PUBLIC SPEAKING AND READING

For Courses S1, S3, S4, and S7 the fee is \$20 for one course; on payment of an additional fee of \$10 the student will have the right to take regularly one additional course in Public Speaking and Reading, and to attend as an Auditor a third course.

In order to obtain credit for one half-course toward a degree a student must obtain the Certificate in two summer courses.

\*S1. Vocal Technique in speaking and reading. *Five times a week.* Mr. G. RALPH BUNKER.

\*S3. Public Speaking. — Training in the delivery of both selected and original speeches. *Five times a week.* Asst. Professor IRVAH L. WINTER and an assistant.

\*S4. Vocal Interpretation of English Prose and Poetry. — Primarily for Teachers of English. *Five times a week.* Asst. Professor IRVAH L. WINTER and an assistant.

\*S7. Vocal Interpretation and Public Speaking. — Advanced course for teachers of public speaking and reading and other qualified students. *Five times a week.* Asst. Professor IRVAH L. WINTER.

## SOCIOLOGY

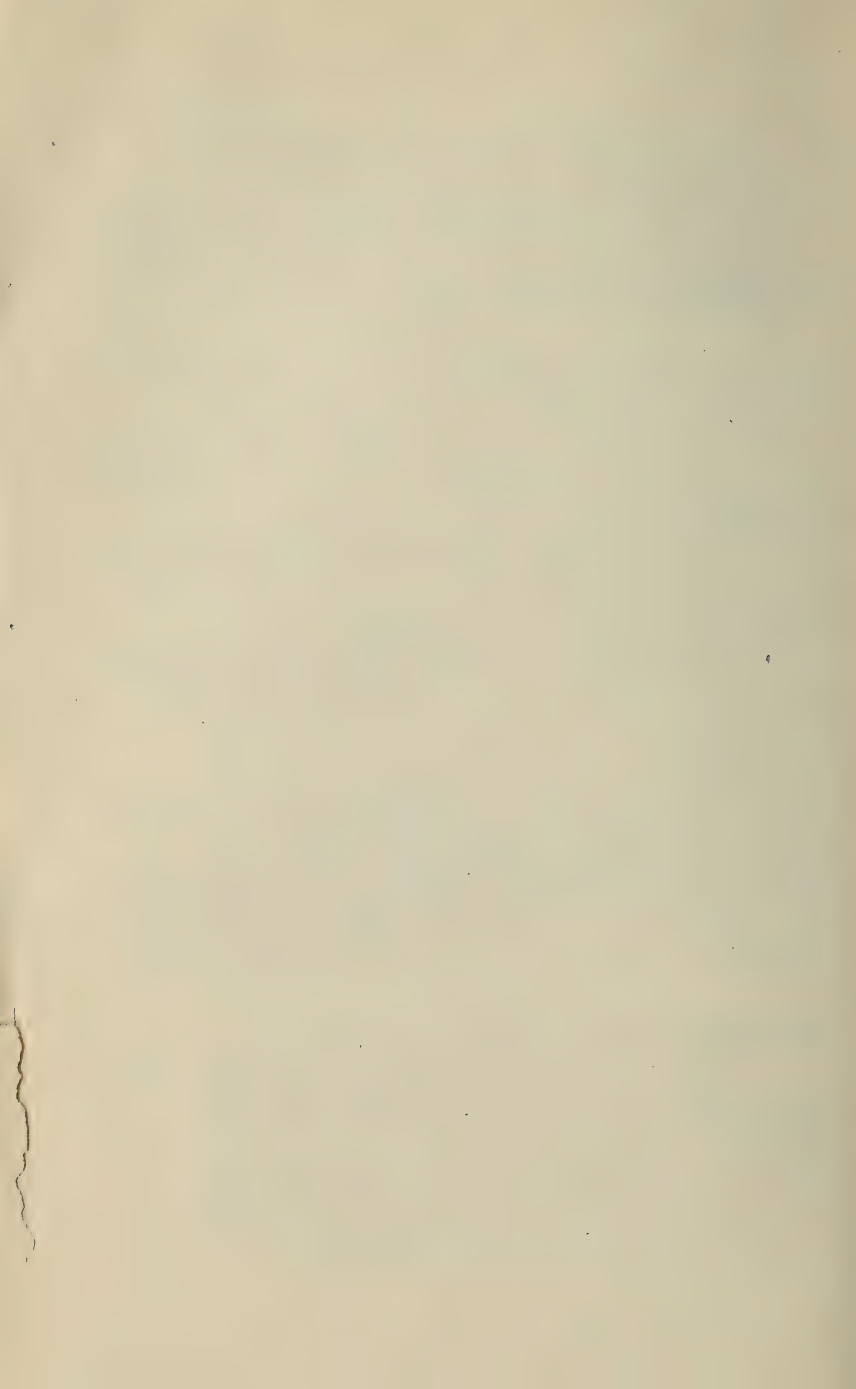
\*S1. Principles of Sociology and Social Problems. *Five times a week.* Professor GARRETT DROPPERS, of Williams College.

This course will expound the general fundamental conceptions of modern Sociology, with a discussion of the history and present bearings and limitations of the *laissez faire* theory, and will take up such current problems as the congestion of population, immigration, factory legislation, and the labor of women and children.

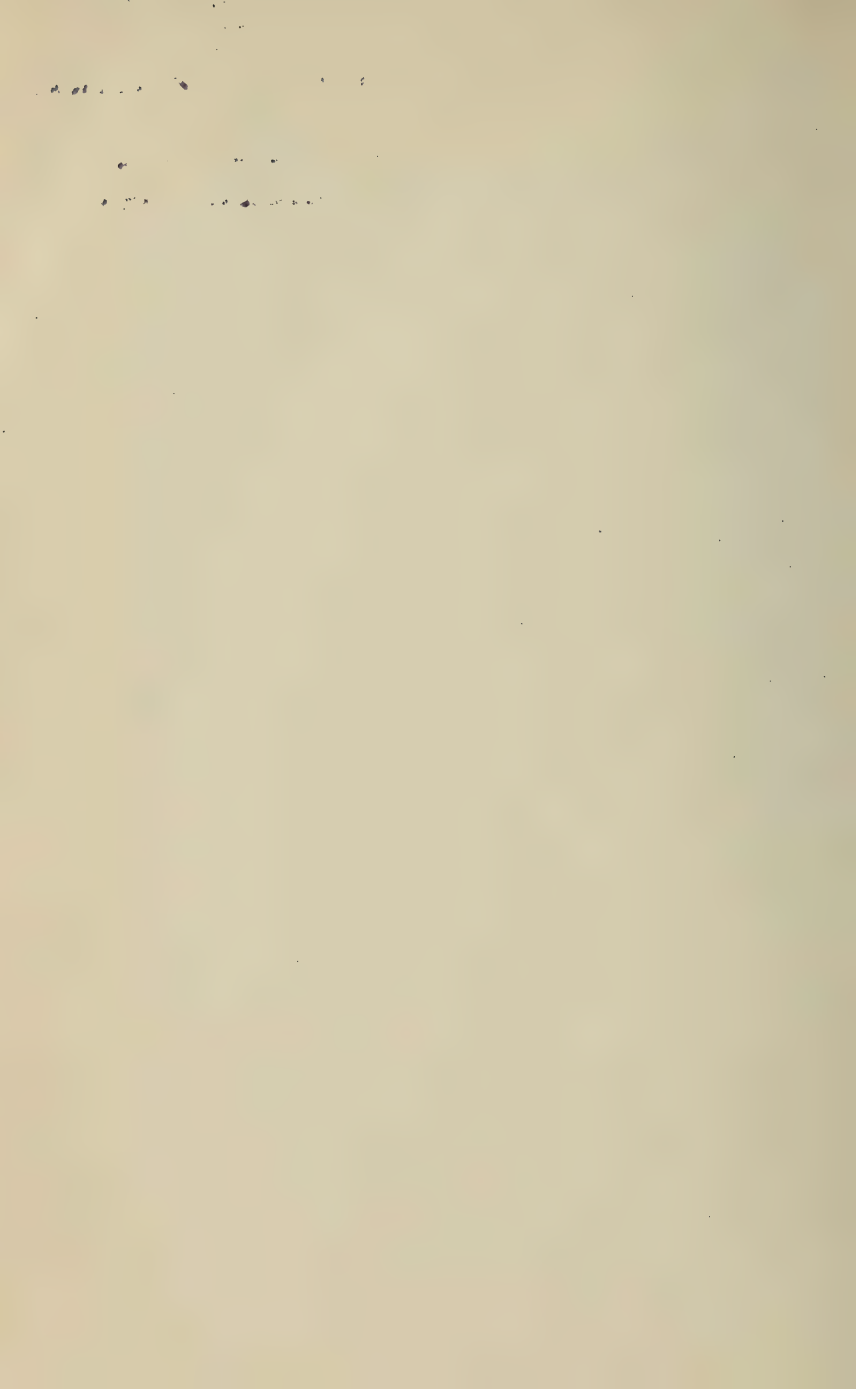
## SPANISH

\*S1. Elementary Spanish. — Reading, grammar, and composition. *Five times a week.* Mr. GEORGE L. LINCOLN.

This course will be given only in case five students apply.







SUMMER SCHOOL OF ARTS AND SCIENCES

Fuller descriptions of the courses in the several departments will be sent on application.

The Dean will be grateful to any one who will send him the addresses of teachers and others who may be interested to receive information about the Summer Courses.

Address: Professor James H. Ropes, Dean,  
19 University Hall,  
Cambridge, Mass.

To the Secretary of the Harvard Summer School of Arts and Sciences, 19 University Hall, Cambridge, Mass.: —

Please send me the full description of the courses in.....

*Name,* .....

*Address,* .....



## OFFICIAL REGISTER OF HARVARD UNIVERSITY

[ *Entered, March 24, 1905, at Boston, Mass., as second-class matter,  
under Act of Congress of July 16, 1894.* ]

---

Issued at Cambridge Station, Boston, Mass., twice a month from October to March inclusive, six times a month from April to September inclusive.

---

These publications include :—

The Annual Reports of the President and of the Treasurer.

The Annual University Catalogue.

The Annual Catalogues of the College and the several Professional Schools of the University ; the Descriptive Pamphlet ; the Announcements of the several Departments ; etc., etc.

1912

DEC 7 1918

# OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOLUME IX      FEBRUARY 15, 1912      NUMBER 5

SUMMER SCHOOL OF ARTS AND SCIENCES

JULY 2 — AUGUST 13, 1912



## Excursions to Places of Historical and Literary Interest in Eastern Massachusetts

IN CHARGE OF

WILLIAM EDWIN DORMAN, A.B., LL.B.,  
formerly *Assistant in History.*

GUY NEWHALL, A.B., LL.B.,  
formerly *Assistant in Government.*

These EXCURSIONS are arranged as a part of the educational work of the Harvard Summer School. To a teacher of American History or American Literature no place in this country offers more that is of interest and practical value for illustrating daily school work than Eastern Massachusetts. The sites and relics of the settlement of the Pilgrim Fathers at Plymouth; the houses and public buildings of the Colonial Period; the battle-fields of Concord, Lexington, and Bunker Hill; the localities associated with memories of John Adams, Paul Revere, Washington, and other revolutionary heroes; the homes of Longfellow, Lowell,

Holmes, Emerson, Thoreau, Hawthorne, Whittier, Elizabeth Stuart Phelps, Louisa M. Alcott, and Harriet Beecher Stowe, and the familiar scenes referred to in their poems, tales, and essays; the statues and portraits of famous public men and scholars; the monuments crowded with familiar names at Mt. Auburn Cemetery, suggest the abundance of stirring impressions which may be had by those who come prepared to receive them.

In the excursions great pains will be taken by the conductors to enable every one to see and learn as much as possible. Many privileges will be open to members of these parties which are not ordinarily extended to tourists. All details of the excursions are arranged in advance. The fee in each case covers transportation, admittance fees, and, if the journey lasts more than half a day, lunch or dinner. The excursions are held on Wednesday afternoons or on Saturdays. The exact dates will be announced in the *University Gazette*, and full announcements will be posted several days before each excursion.

The friends of students will be welcome to become members of these excursions.

### TICKETS

Tickets for the excursions must be procured at the office of the Summer School prior to 4 P.M. on the day preceding each excursion, except when otherwise announced on the bulletin boards. As arrangements for transportation and refreshment must necessarily be completed in advance, *tickets will not be subsequently issued except at the pleasure of the managers and subject to the adequacy of the accommodations.*

## EXCURSION TO BUNKER HILL AND OLD BOSTON

(AFTERNOON)

The historic and literary shrines of Boston, like the Old South Meeting House, King's Chapel, Faneuil Hall, and the Old State House, are for the most part so accessible that the Historical Excursions are planned to include only those less easily found



PAUL REVERE HOUSE

by the individual excursionist. Among these are the house of Paul Revere in North Square, where the celebrated patriot lived during the revolutionary period; and Christ Church in Salem Street, built in 1723, where Revere's signal lights are said to have flashed their momentous message from the belfry, and which has many claims to fame. Leaving Harvard Square at 1.30 P.M., by electric cars, the excursionists will visit both these

buildings, with sufficient time to inspect the many objects of interest within them. In the walk through the quaint old North End, the sites of the old North Church, torn down by the British for fuel during the winter of the siege of Boston, of the Governor Hutchinson, Sir Harry Frankland, Cotton Mather, Governor Phipps, and Robert Newman houses will be pointed out. In Copp's Hill Cemetery will be seen the tombs of the Mathers, of Robert Newman, sexton of Christ Church, who made Revere's signals, of Daniel Malcolm, celebrated in the verse of Holmes, of Edmund Hartt, the builder of Old Ironsides, together with many quaint epitaphs.



CHRIST CHURCH

On Bunker (or, more properly, Breed's) Hill, in Charlestown, the story of the battle will be related and the fortifications indicated, and those who desire may climb to the top of the monument.

Fee, 75 cents, with a special charge of 10 cents to those who enter the monument.



## EXCURSION TO LEXINGTON AND CONCORD

(ALL DAY)

Leaving Harvard Square at 8.15 A.M., in special electric cars, the party will traverse much of the route taken April 19, 1775, by the British detachment under Lieutenant-Colonel Smith and Major Pitcairn, by the reinforcements under Earl Percy, and by



LEXINGTON "MINUTE MAN"

the entire British force on its retreat to Charlestown under the fire of the Americans. From Arlington to Lexington, the cars follow the course of Paul Revere on his midnight ride, passing the site of the Black Horse Tavern, where the Committee of Safety were meeting on June 18th, the Munroe Tavern, which

served as Earl Percy's quarters, the Jason Russell House, and the Buckman Tavern, the rendezvous of Captain Parker's men.

In Lexington, in addition to the battle-field and monuments, the party will visit the Town Hall, containing Sandham's painting entitled "The Dawn of Liberty," the old Belfry, and the Hancock-Clark house, where John Hancock and Samuel Adams were spending the night when



LEXINGTON GREEN



EMERSON'S GRAVE — SLEEPY HOLLOW

warned by Revere of the British advance. This venerable mansion is the home of the Lexington Historical Society, with its interesting collection of revolutionary relics and antiquities.

After dinner at the Colonial Inn in Concord, the party will be driven in omnibuses to the home



HOME OF EMERSON

of Ralph Waldo Emerson, of Nathaniel Hawthorne (including Wayside and the Old Manse), and of Bronson Alcott and his

daughter Louisa M. Alcott, to Sleepy Hollow Cemetery, to the museum of the Concord Antiquarian Society, and to the old North Bridge where "the embattled farmer" stands perpetuated in the bronze statue by Daniel Chester French, another son of Concord.

A pleasant and profitable feature of the trip to Concord has been a short address to the excursionists, with reminiscences of Hawthorne, Emerson, the Alcotts, and Thoreau, by Mr. Frank B. Sanborn, journalist, historian, and biographer, the only survivor of the Concord group of authors. It is expected that Mr. Sanborn will meet the party again this year.

Fee for the trip, \$2.25.



"OLD MANSE" (HAWTHORNE)



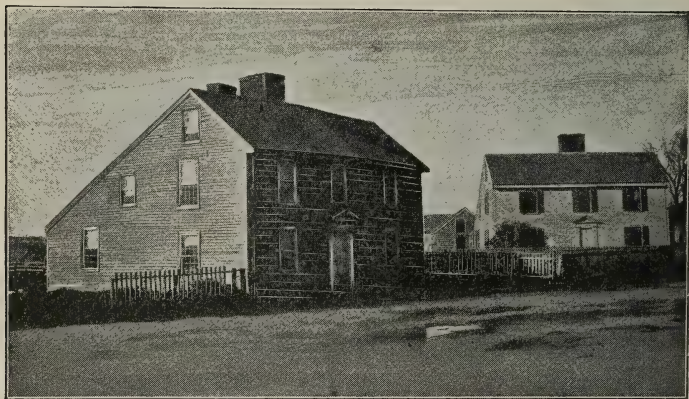
ALCOTT HOUSE



## EXCURSION TO QUINCY, HINGHAM, AND NANTASKET BEACH

(AFTERNOON)

The accompanying cut shows the two plain New England farm-houses in which were born two presidents of the United States, John Adams and John Quincy Adams, father and son.



THE ADAMS HOUSES

The older of the two houses, the birthplace of the second president, was built in 1681; in the house adjoining, John Adams and his wife Abigail began their housekeeping.

The party will leave Cambridge for Quincy by special electric cars, first stopping at the fine old mansion house of Judge Edmund Quincy, built in 1706. His daughter was the "Dorothy Q" whom the poet Holmes has immortalized. In one of the parlors is still to be seen the wall-paper hung in anticipation of the wedding of still another Dorothy Quincy to John Hancock, but under the stress of the times the marriage ceremony was performed elsewhere. The house is now carefully preserved in the custody of the Colonial Dames.

After visiting the homes of the Presidents, the trip will be continued to Hingham, where the party will visit the old meeting-



HOUSE OF DOROTHY QUINCY

house, built in 1681, the oldest place of worship in the United States still used for religious purposes. If time permits, the graves of John A. Andrew, the war-governor of Massachusetts, and of General Benjamin Lincoln, a division commander under Washington, will be visited.

The party will then proceed to Nantasket Beach, where supper may be procured, and thence the return to Boston will be made by steamboat in Boston harbor.

Fee for transportation and admissions, but not including supper, \$1.50.





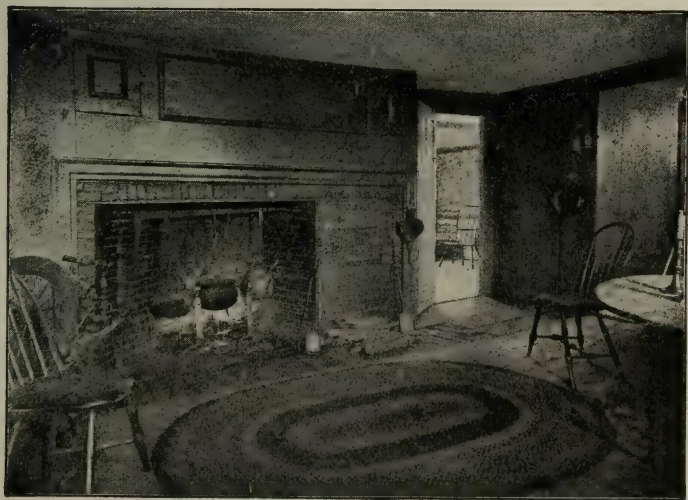
HOME OF ELIZABETH STUART PHELPS

## EXCURSION TO WHITTIER LAND AND ANDOVER

(ALL DAY)

The journey to Haverhill and Amesbury, in the Merrimac Valley, where the poet Whittier lived most of his life, will be made entirely by electric car through interesting residential and rural communities.

At Andover will be seen the buildings of Phillips Academy, founded 1778, including those formerly occupied by Andover Theological Seminary, now removed to Cambridge; the house where the late Elizabeth Stuart Phelps Ward wrote "Gates Ajar," and the houses where lived her father and grandfather, Professors



KITCHEN OF WHITTIER'S BIRTHPLACE

Phelps and Stuart, the well-known theologians; the house of Harriet Beecher Stowe and her husband, Professor C. E. Stowe, where she wrote the "Key to Uncle Tom's Cabin" and "Dred," and, in the cemetery near by, her grave; and the house where Dr. Samuel F. Smith, Harvard '29, wrote the hymn, "My country, 't is of thee," while a student in the Seminary.

In East Haverhill, after passing Lake Kenoza, the "sand-rimmed pickerel pond," the party will visit the birthplace of Whittier, built in 1688 by his ancestor Thomas, and described in "Snow-bound." Ample time will be allowed to roam over the grounds of the old farm; cross the "stepping-stones" of Fernside Brook, which "laughed" for the delight of the "bare-foot boy"; sit beneath the shade of the "Whittier Elm"; look in at the old barn; call at the house of little Lydia Ayer, the schoolmate whom Whittier may have had in mind when he wrote "In School Days"; and read by the "clean-winged hearth" of the quaint old fire-place appropriate passages from "Snow-bound."



BIRTHPLACE OF WHITTIER

Leaving Haverhill, the electric cars will convey the party to the poet's Amesbury home, where in the "garden room" his best known works were penned. The house is now occupied by his biographer and literary executor, Mr. Samuel T. Pickard, who usually meets the excursionists in Haverhill. Whittier's pew in the Friends' meeting-house and his grave in their burial-ground will also be visited.

If time permits, Salisbury Beach, the scene of "The Tent on the Beach," will be visited.

An outdoor lunch will be served.

Fee \$2.75.

## EXCURSION TO MOUNT AUBURN

(AFTERNOON)

After a short walk in the vicinity of the College Yard, — in the course of which the party will visit the old mansion known as the “Bishop’s Palace” (which served as General Burgoyne’s place of confinement after his surrender at Saratoga), the site of the birth-place of Oliver Wendell Holmes (also famous as the starting point of Colonel Prescott and his men to fortify Bunker Hill) Christ Church, and the site of the first printing establishment in America, — special electric cars will convey the party to Mt. Auburn Cemetery, where the graves of many illustrious men and women will be visited, including those of Lowell, Longfellow, Holmes, Parkman, Motley, Story, Everett, Sumner, Phillips Brooks, Edwin Booth, Agassiz, Felton, Professor Shaler, Charlotte Cushman, and Dorothea Dix.



ELMWOOD, HOME OF JAMES RUSSELL LOWELL

The cars will then be taken for Elmwood, the home of James Russell Lowell, a house with a history before the poet was born, and Craigie House, where General Washington and his wife were quartered during the siege of Boston, and where Longfellow’s most celebrated works were written.

It is probable that the party will be admitted, as in previous years, to the studies of Lowell and Longfellow. On Brattle Street, once known as “Tory Row,” will also be seen the Baroness Riedesel linden trees, and the Lee, Vassall, Brattle, and Ruggles houses, each with its own story.

Fee, 50 cents.



## EXCURSION TO PLYMOUTH

(ALL DAY)

To approach Plymouth by sea, as did the Pilgrim Fathers in 1620, best befits an historical pilgrimage. Special electric cars will convey the party to Rowe's Wharf, Atlantic Avenue, Boston, in season to procure seats on the upper deck of the commodious steamboat that plies daily at 10 A.M. between the capitals of the Massachusetts Bay and Plymouth Colonies. The numerous



PLYMOUTH ROCK

points of historic interest in Boston harbor and on the south shore will be pointed out, as well as the topography of Plymouth harbor, with special reference to the landing of the Pilgrim band. In Plymouth will be seen the famous "rock," with its granite canopy; Cole's Hill, near by, where nearly half the little settlement found their last resting place; Burial Hill, the site of the

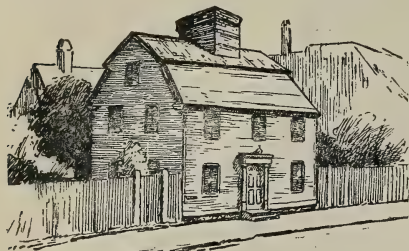


first fort and place of worship, containing the graves of Governor Bradford, and that where "ended the pilgrimage of John Howland," the last survivor of the Mayflower passengers living in Plymouth; Leyden Street, the oldest highway in New England, extending from the harbor to Burial Hill, on which the colony built the first or "common house" and later their thatched cottages. Pilgrim Hall, containing the collection of Pilgrim relics and paintings will be visited, and also the "National Monument to the Forefathers."

## EXCURSION TO SALEM AND DANVERS

(ALL DAY)

This excursion, like that to Haverhill, will be made entirely by electric car. To the student of Hawthorne it is invaluable.



BIRTHPLACE OF HAWTHORNE

There are still standing in Salem some eight or nine buildings intimately connected with the novelist, including the following, all of which the party will visit: his birthplace on Union Street; the house on Herbert Street where he lived at different times for twenty years, con-

taining the "lonely chamber where fame was won"; the Custom House, where he served as surveyor of the port, and where the



CUSTOM HOUSE

mythical manuscript of the "Scarlet Letter" was supposed to have been found; the house on Mall Street, where the "Scarlet

Letter" was written; the "Grimshawe house," described in "Dr. Grimshawe's Secret," and the home of his wife, Sophia Peabody, during their courtship; and the so-called "House of the Seven Gables," of great interest to lovers of Hawthorne, irrespective of its claim to being the mansion of the Pynchons.

In the old Charter Street burial-ground will be seen numerous gravestones described by Hawthorne, from some of which he derived the names of certain of his characters, together with the tomb of Governor Simon Bradstreet, and the only extant contemporaneous gravestone of any of the passengers in the Mayflower.

After the circuit of Salem, the museums and galleries of the Essex Institute, with its collection of antiques, relics, and portraits, and the Peabody Academy of Science, containing ethnological and natural-history exhibits, will be inspected.



BIRTHPLACE OF ISRAEL PUTNAM

Following a "shore-dinner" at Salem Willows, at the entrance to Salem harbor, the party will be conveyed to the historic town of Danvers, the "Salem Village" of the witchcraft episode, where will be seen the homes of George Jacobs and Rebecca Nourse, executed as witches in 1692, with other witchcraft memorials; the birthplace of General Israel Putnam; the house of Colonel Jeremiah Page, a revolutionary officer, which is the scene of Lucy

Larcom's poem, "A Gambrel Roof"; "The Lindens" (Collins House), a stately specimen of provincial architecture, occupied



COLLINS HOUSE

by General Gage, military governor of the province, in the summer of 1774; and "Oak Knoll," where the poet Whittier lived with his kinsfolk, the present occupants.

On the ride to Danvers the cars will cross the North River bridge, the scene of the first armed resistance to British aggression in the Revolution.

Fee, \$2.50.

### BOOKS

Three inexpensive and useful books which it would be well to own are: —

EDWIN M. BACON: *Boston: A Guide Book* (Boston, 1910).

J. W. FREESE: *Historic Houses and Spots in Cambridge and Near-by Towns* (Boston, 1897); excellent heliotypes.

S. T. PICKARD: *Whittier Land* (Boston, 1904); a description of the Whittier country by his authorized biographer.

The following books will be found useful for introductory reading and study. These and many others will be reserved in the reading-room of Gore Hall as a select library on local history and antiquities for the use of students in the Summer School.



### Historical Works

- JUSTIN WINSOR, Editor: *Memorial History of Boston* (4 vols., Boston, 1880-81).  
 EDWARD G. PORTER: *Rambles in Old Boston* (Boston, 1887).  
 MOSES KING: *How to See Boston* (Boston, 1895).  
 L. POWELL, Editor: *Historic Towns of New England* (New York, 1898).  
 EDWIN M. BACON: *Historic Pilgrimages in New England* (Boston, 1898).  
 ——— *Literary Pilgrimages in New England* (Boston, 1902).



SCARLET LETTER HOUSE

- JOSEPHINE L. SWAYNE: *The Story of Concord* (Boston, 1906).  
*Historic Guide to Cambridge*, compiled by Hannah Winthrop Chapter, D.A.R. (Cambridge, 1907).  
 S. A. DRAKE: *A Book of New England Legends and Folk-Lore in Prose and Poetry* (Boston, 1884).  
 ——— *Historic Mansions and Highways about Boston* (Boston, 1899).  
 ——— *Nooks and Corners of the New England Coast* (New York, 1875).  
 FRANK B. SANBORN: *Recollections of Seventy Years* (Boston, 1909).

### Historical Novels, Poems, and Sketches

- JANE G. AUSTIN: *Standish of Standish; A Nameless Nobleman; Dr. Le Baron and his Daughters*.  
 EDWIN L. BYNNER: *Agnes Surriage; Zachary Phipps*.  
 JAMES FENNIMORE COOPER: *Lionel Lincoln*.  
 LYDIA MARIA CHILD: *The Rebels*.  
 NATHANIEL HAWTHORNE: *House of the Seven Gables; Dr. Grimshawe's Secret; Rill from a Town Pump; Endicott and the Red Cross; Mosses from an Old Manse; The Scarlet Letter*.  
 OLIVER WENDELL HOLMES: *Grandmother's Story of the Battle of Bunker Hill; Dorothy Q*.  
 LUCY LARCOM: *A Gambrel Roof*.  
 HENRY W. LONGFELLOW: *Courtship of Miles Standish; Giles Corey (New England Tragedies); Paul Revere's Ride*.  
 JAMES RUSSELL LOWELL: *Cambridge Thirty Years Ago; Under the Willows*.



JOHN G. WHITTIER: *Snow-bound; Telling the Bees; In School Days; The Countess; The Preacher; Prophecy of Samuel Sewall; Homecoming of the Bride.*

Acknowledgments are due to SILVER, BURDETT & Co., publishers of Bacon's "Historic Pilgrimages" and "Literary Pilgrimages," and to the JOURNAL OF EDUCATION for the use of illustrative material in this pamphlet.

### OTHER PLACES OF INTEREST

Information about places worth visiting in and near Boston may be found in some of the books mentioned above, and in the section on Boston in Baedeker's *United States*. In addition to the Historical Excursions, the following institutions and buildings may be named as specially interesting to visitors:—

#### University Museums:

Museum of Comparative Zoölogy.

Botanical Museum (Ware collection of glass models of flowers).

Mineralogical and Geological Museums.

Peabody Museum of Archaeology and Ethnology.

Semitic Museum.

Germanic Museum.

Fogg Museum of Art.

Botanic Garden.

Arnold Arboretum.

#### Boston Museum of Fine Arts.

The Museum is open on week-days from 9 A.M. to 5 P.M., on Sundays from 12 M. to 5 P.M. No charge for admittance is made to members of the Summer School.

Several visits to various departments of the Museum under the guidance of Docents will be provided through the courtesy of the Museum authorities. No charge is made for these visits; and each party is limited to twenty-five persons.

Boston Public Library.

Boston Museum of Natural History.

Trinity Church.

Old South Meeting House.

King's Chapel.

State House.

Charlestown Navy Yard.

Tufts College, Medford.

Wellesley College, Wellesley.

Wayside Inn, Sudbury.

Interesting excursions by electric car, or by steamer in Boston Harbor and Massachusetts Bay, are numerous and inexpensive. In particular the opportunities to become acquainted with the phenomena of the ocean and its shores, — cliffs, rocks, beaches, and tides, — and with the wharves and ocean-going vessels, are commended to inland dwellers. Sea-bathing can be had at Revere Beach and Nantasket Beach.

Useful folding maps of the whole district can be purchased in Cambridge.

uZs.

13

OF THE  
UNIVERSITY OF HARVARD

# OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOLUME X

FEBRUARY 15, 1913

NO. 5, PART I

ANNOUNCEMENT

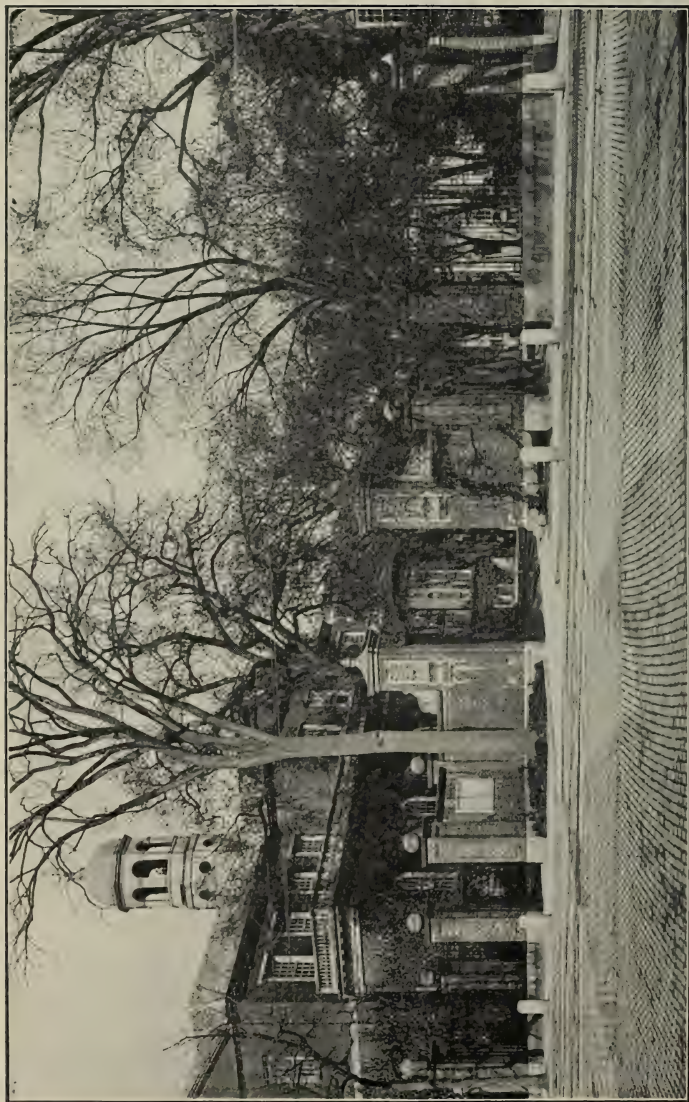
OF THE

SUMMER SCHOOL OF ARTS  
AND SCIENCES

JULY 1 — AUGUST 12, 1913



PUBLISHED BY HARVARD UNIVERSITY  
CAMBRIDGE, MASS.



HARVARD HALL AND THE WEST GATE

## HARVARD UNIVERSITY

### SUMMER SCHOOL OF ARTS AND SCIENCES

TUESDAY, JULY 1, TO TUESDAY, AUGUST 12, 1913

---

### HARVARD UNIVERSITY

The history and environment of Harvard University have been described as follows: —

“Harvard University, founded as a college in 1636, was for over half a century, until the founding in 1693 of the College of William and Mary in Virginia, the only college in the country. The name of the town where it was established was changed from Newtowne to Cambridge in honor of the English university where many of the leading colonists had been educated. Although only three miles inland on the banks of the Charles, Cambridge was at that time a frontier settlement, a fact of which there is still lingering evidence in the clumps of willows, sprouts from the old stockade against the Indians, standing in a part of the college grounds.

“The College is the centre of Old Cambridge. From it westward and northward run the three principal streets, Cambridge Brattle Street, past the houses of Longfellow and Lowell; Garden Street, past the elm under which Washington first reviewed the American army, and past the Observatory and the Botanic Garden; and Massachusetts Avenue, leading to Lexington and Concord, the road along which the British soldiers retreated after the first battle of the Revolution. Near where Garden Street and Massachusetts Avenue separate, on Holmes Place, stood the house in which were the headquarters of General



Ward and of the Committee of Public Safety in 1775, and in which Dr. Oliver Wendell Holmes was born. On the neighboring stretch of green, in front of the present Harvard Law School, Samuel Langdon, President of Harvard College, that 'hotbed of sedition,' offered prayer on the evening of June 16, 1775, for the Continental troops there assembled under Colonel Prescott and about to march to Bunker Hill. Across the street is a group of buildings, Massachusetts, Harvard, and Hollis Halls, and little Holden Chapel, which date back to pre-revolutionary times. During one period of the Revolution the College was removed to Concord, and these buildings were used as quarters for the Continental Army.

"The University derives many advantages from its nearness to Boston. The Harvard College Library is in size at least the fourth, and possibly the third, library in the country, — the Library of Congress being first, — and it is a considerable advantage to have so near the University the Boston Public Library, which is second in size. Other libraries, such as the Boston Athenaeum, the State Library, the library of the Massachusetts Historical Society, the library of the American Academy of Arts and Sciences, and the libraries of the Loyal Legion and the Massachusetts Military Historical Society, furnish re-enforcement in particular fields. The great collections of paintings, sculpture, and other objects in the Boston Museum of Fine Arts offer unsurpassed opportunities of artistic education and enjoyment. Boston is an important musical centre; and is visited by many lecturers and men of note. A terminal centre for railroads and for steamship lines, it affords many and convenient means of communication with the immediate and more distant parts of the country. The highly developed park-system of Boston and of the metropolitan district is one of the great charms of the region.



“The more distant surroundings of Cambridge, the sea-coast and woods, the lake regions of Maine and the White Mountains of New Hampshire, the Berkshire Hills of Massachusetts, and Cape Cod, afford beautiful and varied scenery for the vacation periods. The steamship service to New Brunswick and Nova Scotia gives, at comparatively slight expense, ready access to a beautiful region for an economical long vacation. The neighboring coast towns of Plymouth, Salem, Marblehead, and Gloucester are reminiscent of Colonial days and are of simple, picturesque beauty.

“The general statistics of the University are as follows: —  
 Its material resources are represented by an invested, in-  
 General come-bearing endowment of about twenty-  
 Statistics four million dollars, and buildings, laboratories,  
 and museums, valued, conservatively, at twelve million dollars. The grounds for instruction and research, and for the use of students, include 80 acres in Cambridge for varied University purposes; 63 acres across the river in Boston for athletic purposes; 11 acres for the Medical School buildings in Boston; 394 acres for applied biology, arboriculture, horticulture, and allied subjects, in Jamaica Plain, a suburb of Boston; 700 acres for the Summer Engineering Camp on Squam Lake in the foothills of the White Mountains; and 2000 acres, the Harvard Forest, at Petersham, for field work in forestry; a total of more than 3200 acres. To this list may be added the Arequipa Observatory in Peru.

“On the staff of the University there are 774 officers of instruction, and 135 administrative officers, preachers, curators, etc. Not counting the students in the Summer Schools (1187), or the students in Radcliffe College (563 women), the number of students in Harvard University at the time of the issue of the Catalogue of 1912-13 was 4,279.

“The rooms of the college buildings have associations with the student days of Rufus Choate, Charles Sumner, Edward Everett, Wendell Phillips, William Fitzhugh Lee; of the historians, John Lothrop Motley, Francis Parkman, George Bancroft, and William H. Prescott; of Ralph Waldo Emerson, Henry David Thoreau, James Russell Lowell, Oliver Wendell Holmes; of Edward Everett Hale and Phillips Brooks, and many other men of note. The Harvard Memorial Society has made these associations more real and personal by posting in each room a printed list of the occupants from the beginning.”

To the students in the Harvard Summer School these old associations and surroundings of the oldest American college are offered, as well as the discipline and study of the present-day University summer courses. During the six weeks' session there is abundant opportunity, both in private walks, and trips and in more elaborate excursions made under the guidance of competent scholars, to become acquainted with the scenes of historic events and the homes and familiar localities of great writers. Especially those teachers whose work includes American history and literature can find here, more than at any other place in the world, personal contact with historic places significant for this part of their daily teaching.

## THE SUMMER SCHOOL

Summer instruction has been offered at Harvard for more than forty years, a longer period than at any other university in this country. It began in a summer course in botany, organized in 1871 by Professor ASA GRAY, which was soon followed by courses in biology, chemistry, and geology, taught by Professors LOUIS AGASSIZ, JOSIAH P. COOKE, and NATHANIEL S. SHALER. The gradual en-

largement of these courses into the Summer School of Arts and Sciences was the work of Professor SHALER.

The Harvard summer courses were primarily established in order to provide University instruction for teachers, and were planned in the belief that short-term study can be made most effective by concentration on a single subject. These ideas still control the Harvard Summer School. A student here is expected to enroll regularly in only one course, and to give to that for six weeks his whole time and effort. By work so arranged a good insight can be gained into the principles, the characteristic mode of thought, the main facts, and the best methods of teaching, in an important field of knowledge. A long experience has given increasing confidence in this intensive method of summer study; and only in this way can a large subject be adequately covered in so short a time.

In pursuance of this plan, the work required in any one course will ordinarily fill a student's working time. Since the pace of work is thus more rapid than in term-time, it is possible to make the courses full equivalents of the University "half-course" of the academic year, to which they strictly correspond in standard. The method of instruction varies as may be best adapted to the nature of the subject. Daily lectures are given in each subject, in some cases two lectures each day. With the lectures are combined conferences and recitations, laboratory exercises under supervision, written papers, and reading in the libraries and from text-books.

Students are earnestly advised not to undertake regular work in more than one course, with the exceptions named below; but in addition to the student's main course it is practicable to attend the lectures only (without undertaking any other work or preparing for examination) in one additional course. For this an Auditor's Ticket may be had, on payment of an extra fee of \$10.00.

Exceptions to the above are as follows:—

French S2 (French Conversation) is especially designed to be taken in conjunction with another course in French.

Two courses in Public Speaking and Reading may be taken together.

In Physical Education a course in Theory and a course in Practice are advantageously combined.

In Engineering certain courses are arranged so that two or more may be taken in the same summer, see pp. 21-22.

Lectures in all courses begin on Tuesday, July 1, 1913. *Except on Saturday, July 5, on which day the regular lectures and exercises will be held during the whole day*, there will be no required exercises on Saturday in any courses other than those in Physical Education.

The courses are open to both men and women, with the exception of courses in Engineering, Geology (field-work), Metallurgy, and Shopwork, which are for men only.

No entrance examination is required for admission to any of the courses. The Instructors may, and in many cases should, be consulted beforehand about requisite preparation or preliminary reading. Their addresses are given below.

In the courses in research and the other courses for graduate and advanced students, only competent students, and in limited number, will be accepted. Students in the research courses may attend without extra charge the lectures of any course in the same subject. For admission to any such course the Instructor's permission must be secured in advance.

The summer courses are University courses, and the same standard is set as in other Harvard courses. Nearly all are accepted, subject to the established regulations, to count as half-courses for the degrees of *Bachelor of Arts*, *Associate in Arts*, and *Bachelor of Science*. Seminary work, research courses, and the like, are counted for these degrees only in accordance with the specific recommendation of the Instructor in each case.

The Summer School Certificate, stating that examinations and other tests of the same grade as those required in corresponding courses in Harvard College have been fulfilled, and showing the



amount of credit for a degree carried by the course, is given for each course *satisfactorily completed with a grade of C, or higher.*

*Students in Harvard College must obtain a grade of C, or higher, in order to count a summer course toward any degree.*

With the previous approval of the proper authorities, advanced work in the Summer School can be counted as part of a programme of work for the degree of *Master of Arts*, but for that degree, as for the degree of *A.B. or S.B.*, continuous residence at the University of at least one academic year is required. Summer residence may not be counted as fulfilling part of this academic year of study. Candidates must possess an elementary knowledge of two modern foreign languages (ordinarily French and German), and must pursue, and complete with distinction, a programme of study forming a consistent plan of work, with a definite aim and lying either in one field or in related fields. Such a programme must in every case be approved beforehand by the appropriate Division Committee of the Faculty of Arts and Sciences and by the Administrative Board of the Graduate School of Arts and Sciences.

With reference to the degree of *A.M.*, the summer courses are especially useful to candidates who need more than a full year of resident study for the degree, or who lack some collateral work which cannot conveniently be done during the year of required residence. Moreover, students intending to carry on advanced study at Harvard in the academic year will often find much saving of time and other advantages for their work in the following winter, if they have already become familiar with the Harvard laboratories, libraries, methods, and teachers, through taking a single course in the preceding summer.

The degree of *Doctor of Philosophy* is not given on the ground of any number of courses taken, or of a stated period of study, but only for high attainment gained by long study in a special field, manifested in examinations and a thesis. For the full requirements for the *Ph.D.* see the *Harvard University Catalogue* for 1912-13, pp. 578-581. Students working for this degree at Harvard or elsewhere, especially while engaged in research for their theses, will be heartily welcomed at the libraries of the University, and in some departments laboratory opportunities can be offered to them. They will find in the advanced courses of the Summer School opportunity to carry on their work under the advice and supervision of instructors.

For further information with regard to the Graduate School of Arts and Sciences, and the degrees of *A.M.* and *Ph.D.*, apply to G. W. ROBINSON, *Secretary*, 24 University Hall, Cambridge, Mass.



In Physical Education a special certificate is awarded to those who complete satisfactorily the four years' course. Students are admitted to a summer course, whether they are candidates for the certificate or not.

The Summer School Certificate is usually accepted for the promotion of teachers, and for exemption from certain of the examinations required for teachers' licenses, in localities where examinations are held for these purposes. Teachers desiring to take summer courses with such ends in view are advised to inquire beforehand of the School Authorities at the place where they intend to offer the work, as to what credit will be allowed for it.

Libraries and Museums of the University are open in the summer, including the University Library and Reading-Room, the special working-library in Harvard Hall, the library of Libraries and Laboratories school and college text-books in Lawrence Hall, the various departmental libraries, the Fogg Art Museum, the Germanic Museum, the Semitic Museum, the Museum of Natural History, and the Peabody Museum of Archaeology and Ethnology. The University Laboratories of Chemistry, Physics, Astronomy, Metallurgy, and Psychology are used for the courses in those subjects.

In Boston the Boston Public Library and the Museum of Fine Arts (both open daily, including Sunday) are accessible to students without charge.

Morning Prayers, conducted by representatives of various denominations, are held daily at 8.45 A.M. in Appleton Chapel. Morning Prayers For these services a choir directed by Dr. Davison, the University Organist and Choir-master, will be organized from among the students.

Historical Excursions, seven in number, are arranged for Wednesday afternoons and Saturdays to the districts of greatest historical and literary interest in eastern Massachusetts. They are carefully planned both for enjoyment and instruction, and, as for the past twelve years, will be under the guidance of Mr. William E. Dorman and Mr. Guy Newhall, formerly Assistants in the University in the departments of History and Government.

The Excursions this year will include the following:—

Cambridge and Mt. Auburn  
 Bunker Hill and Old Boston  
 Lexington and Concord  
 Quincy, Hingham, and Nantasket Beach  
 "Whittier Land" and Andover  
 Plymouth  
 Salem and Danvers

Five visits to the Boston Museum of Fine Arts, under the guidance of Museum Docents, will be provided for limited numbers without charge.

On one of the early evenings of the session there will be a reception at the Harvard Union to all members of the Summer School.

During the session Professor COPELAND will give a course of evening Lectures and Readings in English and American Literature in the New Lecture Hall.

Evening Readings from English Literature, intended especially for students in Public Speaking but open to all Summer Students, will be given by Professor WINTER.

There will be single lectures on various subjects of general interest by professors on the regular University staff.

Dr. A. T. DAVISON, Jr., will conduct a series of organ-recitals.

On Thursday evening, August 7, the annual Gymnastic Exhibition by the students in the courses in Physical Education will be held in the Hemenway Gymnasium.

In addition to the above, which are all open without charge to Dramatic members of the Summer School, the COBURN Performances PLAYERS will give four performances of classic plays, either in the College Yard, or, in case of bad weather, in Sanders Theatre, as follows:—

<i>Monday</i> , August 4, 8.00 P.M.	} 2.30 P.M. 8.00 P.M.
<i>Tuesday</i> , " 5, 8.00 P.M.	
<i>Wednesday</i> , August 6,	

The plays will probably be four plays of Shakespeare.

For *Summer Students* tickets to these plays will be sold at the following reduced rates:—

Single tickets, 50 cents.

Season ticket to the four plays, \$1.50.

A higher price will be charged to the public at large.

Phillips Brooks House, with parlors and a writing-room, will be open for social purposes, and various social gatherings are held there during the session of the School. On Wednesday evenings during the session the men of the Summer School are invited to meet informally at the Harvard Union. The University tennis-courts are kept in order through the summer, and at one of the University boat-houses boats for rowing on the Charles River can be hired by members of the Summer School. The electric-car lines radiating from Boston and Cambridge, and the steamboats of Boston Harbor, offer abundant opportunities for afternoon and Saturday excursions to parks, hills, woods, lakes, and the beaches and rocks of the neighboring sea-shore. Sea-bathing can be had at many points within easy reach. Private swimming-lessons from competent instructors at the pool of the Sargent Gymnasium and of the Cambridge Y. M. C. A. can be arranged for a small fee.

The climate of Cambridge during the period of the Summer School is suitable both for study and for out-of-door recreation.

The tuition-fee for a course varies from \$20 to \$40. Detailed statements will be found below in the List of Courses. **Expenses** In addition a registration fee of \$3 is required of every student.

An Auditor's ticket may be obtained, on the additional payment of \$10, by any registered student who has paid the full fee in one course. It will admit to the lectures only (not to laboratory or other special work) in any other courses, with the exception of the courses in Physical Education, the Psychology of the Abnormal, and Public Speaking and Reading.

*No reduction of fee will be allowed for late entrance, or for withdrawal, except on account of illness or other like serious and unavoidable cause. In no case will a reduction be allowed when the student is present during more than half the term.*

*Money to meet expenses should be brought in cash, bank drafts, cashier's checks, or money orders. Checks or drafts should be drawn on Boston or New York banks in order to save cost of exchange.*

*Private checks are not negotiable.*

Comfortable furnished rooms near the Harvard Yard are offered for rent in great abundance at prices ranging from \$1 to \$4 per week

for a single room, and \$2.50 to \$7 per week for a suite of rooms, including care of room, light, and the use of a bathroom. Many of the single rooms and suites are suitable for two persons. Complete apartments (furnished) can be hired at reasonable rates by those who wish to undertake light housekeeping. In case two or more students are planning to come together they would undoubtedly find one of these small apartments of two, three, or four rooms more comfortable than the lodging houses. It is suggested in case this plan appeals to such students that they consult with the Secretary of the Summer School.

Table board can be had in private boarding-houses or in public restaurants at prices ranging from \$4 to \$8 per week.

A list of lodgings and boarding-houses will be sent on application to the Secretary of the Summer School, University Hall, Cambridge, Mass., but it will usually be found more satisfactory to engage board and rooms after arrival in Cambridge.

The average necessary expenses in Cambridge, for the six weeks of the Summer School, not including travelling expenses, may be estimated at \$80-\$90, but with great economy a smaller amount (not less than \$70) can be made to suffice.

The chief railroad stations for Harvard University are those in  
 Railroad and Boston, from which Cambridge is reached by electric  
 Steamship cars. Baggage should be sent from Boston by  
 Rates and baggage-transfer or express.  
 Service

By direct steamer lines Boston may be reached, cheaply and comfortably, as follows:—

From *New York*, by the Fall River Line, leaving New York daily at 5 P.M.; by the Providence Line, leaving daily at 5 P.M.; and by the Joy Line (via Providence), leaving every week-day at 5.30 P.M.;

From *Philadelphia*, *Baltimore*, and *Norfolk, Va.*, by the lines of the Merchants' and Miners' Transportation Co., with frequent sailings (on these steamers reduced rates are given to students);

From *Savannah*, by the steamers of the Ocean Steamship Co., sailing twice a week;

From *Charleston, S.C.*, and *Jacksonville, Fla.*, by the Clyde Line, and from *Mobile* and *Galveston* by the Mallory Line, both sailing to New York, where good connection is made for Boston by either rail or steamer.

The Summer School is thus conveniently accessible to students from the more distant as well as the nearer Southern States.

From *Portland, Rockland, Bangor, and Eastport, Me., and St. John, N.B.,* and from *Yarmouth, N.S. (for Digby and Halifax),* the steamers of the Eastern Steamship Co. sail either daily or several times a week, and from *Halifax and Prince Edward Island* there are weekly sailings by the Plant Line.

Students coming from a distant state who wish to know the names of other students coming from their section of the country, in order that they may not have to travel alone, are advised to consult with the Secretary of the Summer School.

Before being enrolled as a member of a course each student is required to register in person at the OFFICE OF THE SUMMER SCHOOL and to pay all required fees and charges at the Registration, BURSAR'S OFFICE in Dane Hall. Students should etc. register on or before Monday, June 30, since

lectures in all courses will begin promptly at the announced hours on Tuesday morning, July 1. It is of the greatest importance that all students should be present at the first meeting of their classes.

The places of meeting of the several courses will be announced on the bulletin boards.

Regular exercises will be held on Saturday, July 5, both morning and afternoon, but not on the succeeding Saturdays of the session.

Final examinations in all courses will be held on Monday, August 11, and Tuesday, August 12, 1913.

The following students, resident in various parts of the United States, were in attendance at the Summer School in 1912 and have

State Representatives. given their names as willing to be consulted in case any prospective student wishes special information with regard to the courses, or as to such general matters as transportation to Boston, accommodations in Cambridge, etc.

#### ARKANSAS

Carl C. Gardner,

Henderson-Brown College, Arkadelphia.

#### CALIFORNIA

George C. Thompson,

High School, Alameda.

Alice E. Graham,

542 Jones St., Oakland.

#### COLORADO

Mary C. Porter,

East Side High School, Denver.

#### DISTRICT OF COLUMBIA

J. Richard Riggles, Jr.

Smithsonian Institution, Washington.

#### FLORIDA

Homer E. Wakefield,

High School, Cocoa.



## GEORGIA

J. S. Fleet,

Peacock-Fleet School, Atlanta.

## ILLINOIS

Presley P. Carson,  
J. Mabel Whittemore,Pana.  
4457 N. Paulina St., Chicago.

## INDIANA

Charles W. Hitchcock,  
Alberta Sigelen,High School, Brookville.  
1542 Barth Ave., Indianapolis.

## IOWA

John M. Van Liew,  
Dorothy H. Medary,808 Lyon St., Des Moines.  
Waukon.

## KANSAS

I. B. Morgan,  
Anna B. Easley,High School, Kansas City.  
Elk City.

## KENTUCKY

C. C. Justus,

Ballard County High School, LaCenter.

## MARYLAND

Hazel V. Dennis,

1021 Madison Ave., Baltimore.

## MICHIGAN

Washington L. Barr,  
Mabel Creswell,Cheboygan.  
764 Lothrop Ave., Detroit.

## MINNESOTA

Harold P. Miller,

2425 Garfield Ave., S., Minneapolis.

## MISSOURI

F. P. Cassidy,  
Jennie H. Chase,Central High School, St. Joseph.  
5736 McPherson Ave., St. Louis.

## NEBRASKA

O. R. Bowen,  
Eunice Stebbins,West Point.  
1230 Park Wild Ave., Omaha.

## NORTH CAROLINA

Clarence Lineberger,  
J. Richard Crozier,Lenoir College, Hickory.  
Wake Forest College, Wake Forest.

## NORTH DAKOTA

Ella L. Fulton,

University of North Dakota, University.

## OHIO

Lester L. Riley,  
A. L. Button,2911 Urwiler Ave., Westwood, Cincinnati.  
1225 Millicent Ave., Youngstown.

## OREGON

Elizabeth L. Maurer,

Eugene.

## PENNSYLVANIA

William J. Jack,  
Lilian E. Johns,State Normal School, Indiana.  
3602 Bates St., Pittsburgh.

## SOUTH DAKOTA

Ira A. Jones,

Parker.

## TEXAS

Rufus W. McCulloch,

Daniel Baker College, Brownwood

## VIRGINIA

William McE. Miller,

Washington and Lee University, Lexing-  
[ton.

## WEST VIRGINIA

Florence Charter,

West Union.

## WISCONSIN

Anna Glaettli,

158 Reservoir Ave., Milwaukee.

Undergraduates in Harvard College are not permitted in any one summer to count more than one of the summer courses given in Cambridge (except courses in Shopwork), obtaining credit for it as a "half-course."

Undergraduates wishing to take a summer course for the purpose of making up a failure in college will be admitted to the following courses *only*:—

French S4 (Second-year College French).  
 German S4 (Second-year College German).  
 Mathematics SK (Trigonometry).  
 Engineering courses given at the Engineering Camp.

Undergraduates from other colleges taking summer work in order to make up a deficiency will be admitted to other courses than the above-mentioned only by special permission from Dean WEBSTER.

The total enrolment of the Summer School in 1912 was 823 persons, of whom 51 per cent were men and 49 per cent women. Attendance 61 per cent of the students enrolled in general courses were teachers and school officers. The residence of the students enrolled in general courses was as follows:—

New England States . . . . .	275
Middle States . . . . .	76
Southern States . . . . .	48
North Central States . . . . .	73
Western States . . . . .	9
Foreign Countries . . . . .	4

Further information and advice will be gladly furnished on application to the SECRETARY OF THE SUMMER SCHOOL,  
 19 University Hall,  
 Cambridge, Mass.

NOTE. — During the Session the Office of the Summer School is in Sever Hall, Room 5.

OTHER SUMMER COURSES IN HARVARD UNIVERSITY.

For information about

The Summer Term in the Harvard Graduate School of Medicine,  
 apply to Dr. HORACE DAVID ARNOLD,

Harvard Medical School,  
 Boston, Mass.

For information about

Graduate Summer Courses in Applied Biology,  
 in Architecture,  
 in Mining,

apply to the DEAN OF THE GRADUATE SCHOOLS OF APPLIED SCIENCE,  
 16 University Hall,  
 Cambridge, Mass.

OFFICERS OF THE  
SUMMER SCHOOL OF ARTS AND SCIENCES

1913

---

PRESIDENT

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., Ph.D.

ADMINISTRATIVE BOARD

JAMES HARDY ROPES, A.B., D.D., *Hollis Professor of Divinity and  
Dexter Lecturer on Biblical Literature*, DEAN.

KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Instructor in English*,  
ASSISTANT DEAN.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and Art of  
Teaching*.

CLIFFORD HERSCHEL MOORE, Ph.D., *Professor of Latin*.

GEORGE WASHINGTON PIERCE, S.B., Ph.D., *Assistant Professor of Physics*.

HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineer-  
ing, and Director of the Engineering Camp*.

WILLIAM BENNETT MUNRO, Ph.D., LL.B., LL.D., *Professor of Municipal  
Government*.

LOUIS ALLARD, Agrégé-des-lettres, *Assistant Professor of French*.

SECRETARY

GERALDINE S. PROUTY, A.B.

INSTRUCTORS

DUDLEY ALLEN SARGENT, A.M., M.D., S.D., *Director of  
the Hemenway Gymnasium*, 27 Everett St.

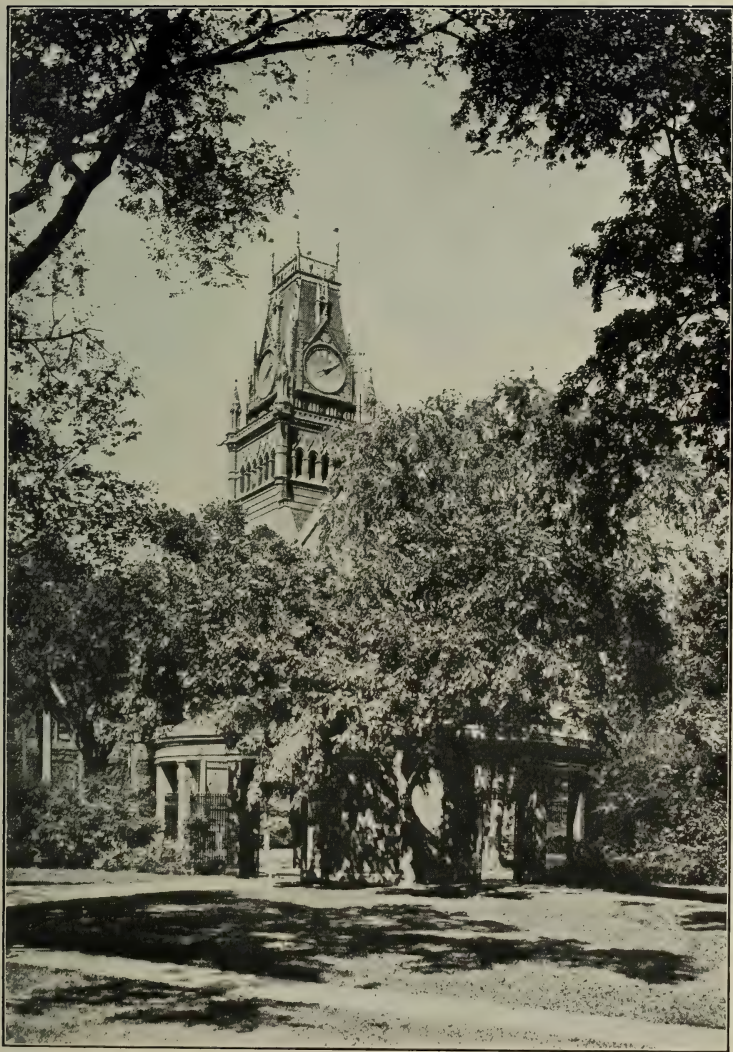
JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography and  
Mineralogy, and Curator of the Mineralogical Museum*,  
University Museum

CHARLES TOWNSEND COPELAND, A.B., *Assistant Professor  
of English*, Hollis 15

EDWARD RUSSELL MARKHAM, *Instructor in Shopwork*,  
137 Fresh Pond Parkway

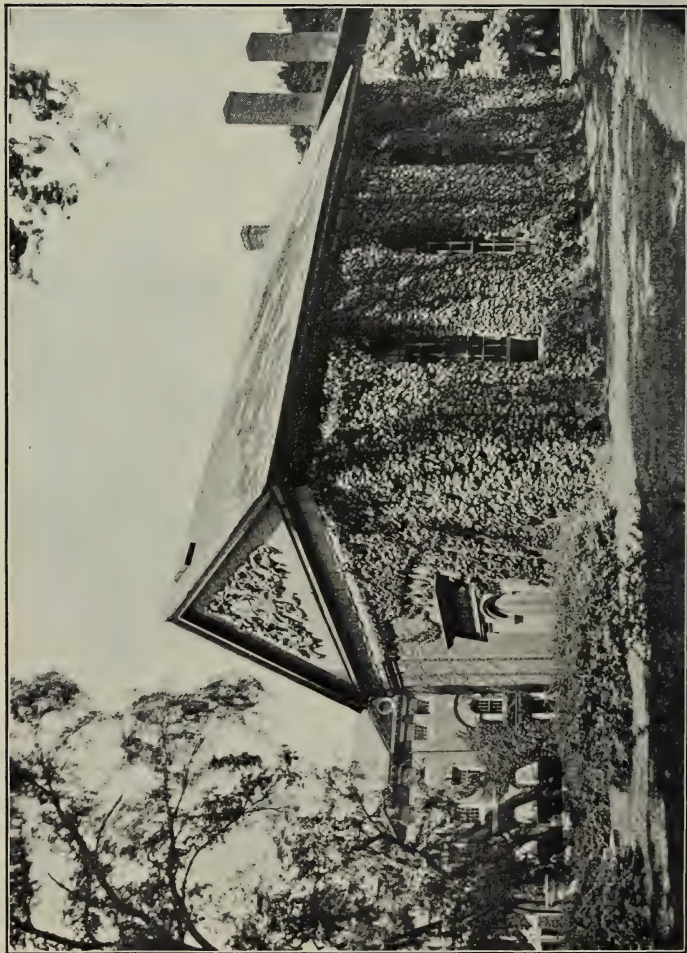
WILLIAM FOGG OSGOOD, Ph.D., LL.D., *Professor of  
Mathematics*, 74 Avon Hill St.

HERMANN JULIUS WEBER, Ph.D., *Instructor in German*, 43 Lexington Ave.



MEMORIAL HALL TOWER AND THE DOUBLE GATE  
OF THE CLASSES OF 1887 AND 1888





HOLDEN CHAPEL, 1744, AND PHILLIPS BROOKS HOUSE, 1899



THE COLLEGE YARD



THE HOUSE OF HENRY WADSWORTH LONGFELLOW



- IRVAH LESTER WINTER, A.B., *Assistant Professor of Public Speaking*, Hubbard Park
- WALTER RAYMOND SPALDING, A.M., *Associate Professor of Music*, 5 Berkeley Place
- GEORGE CHANDLER WHIPPLE, S.B., *Gordon McKay Professor of Sanitary Engineering*, 103 Park Ave., New York, N. Y.
- EDWIN FRANCIS GAY, Ph.D., *Professor of Economics, and Dean of the Graduate School of Business Administration*, Riverbank Court 420
- KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Instructor in English, and Assistant Dean of the Summer School of Arts and Sciences*, 19 Ash St.
- HECTOR JAMES HUGHES, A.B., S.B., *Assistant Professor of Civil Engineering, and Director of the Engineering Camp*, 6 Clement Circle
- OLIVER MITCHELL WENTWORTH SPRAGUE, Ph.D., *Assistant Professor of Banking and Finance*, 18 Sumner Road
- JAY BACKUS WOODWORTH, S.B., *Associate Professor of Geology*, 51 Oxford St.
- GREGORY PAUL BAXTER, Ph.D., *Assistant Professor of Chemistry*, Boylston 2
- RALPH BARTON PERRY, Ph.D., *Professor of Philosophy*, 104 Lake View Ave.
- MERRITT LYNDON FERNALD, S.B., *Assistant Professor of Botany*, 14 Hawthorn St.
- GEORGE LUTHER LINCOLN, A.M., *Instructor in Romance Languages*, 2000 Commonwealth Ave., Boston
- ROBERT MEARNs YERKES, Ph.D., *Assistant Professor of Comparative Psychology*, 3 Fuller Place
- LOUIS JOSEPH ALEXANDRE MERCIER, A.M., *Instructor in French*, 14 Avon Place
- GEORGE SHANNON FORBES, Ph.D., *Instructor in Chemistry*, 51 Thornton St., Roxbury
- ARTHUR FISHER WHITTEM, Ph.D., *Instructor in Romance Languages*, 9 Vincent St.
- HENRY WYMAN HOLMES, A.M., *Assistant Professor of Education*, 14 Arlington St.
- GRINNELL JONES, S.M., Ph.D., *Instructor in Chemistry*, 39 Ellery St.
- ASBURY HAVEN HERRICK, A.M., *Instructor in German*, 34 Maple Ave.
- ARCHIBALD THOMPSON DAVISON, Jr., Ph.D., *Organist and Choir-master, and Instructor in Music*, 22 Francis Ave.
- ROBERT HOWARD LORD, Ph.D., *Instructor in History*, Perkins 27

- HARRY DAVIS GAYLORD, S.B., *Assistant in Mathematics*,  
104 Hemenway St., Boston
- HARVEY CORNELIUS HAYES, Ph.D., *Instructor in Physics*,  
262 Upland Road
- HOWARD JAMES SAVAGE, A.M., *Instructor in English*, 24 Irving St.
- HENRY ROBINSON SHIPHERD, A.B., formerly *Assistant in English*,  
26D Shepard St.
- JOHN WYMOND MILLER BUNKER, Ph.D., *Instructor in Sanitary Analysis*,  
361 Harvard St.
- WINTHROP PERRIN HAYNES, A.M., *Assistant in Geology*, Conant 10
- 

- EPHRAIM DOUGLASS ADAMS, Ph.D., *Professor of History in Leland Stanford Jr. University*, Stanford University, California
- CALVIN LESLIE LEWIS, A.M., *Upson Professor of Rhetoric and Oratorical Training in Hamilton College*, Clinton, New York.
- FREDERICK TUPPER, Jr., Ph.D., *Professor of the English Language and Literature in the University of Vermont*, Burlington, Vt.
- ERNEST CARROLL MOORE, Ph.D., *Professor of Education in Yale University*, New Haven, Connecticut
- WILLIAM HEALY, A.B., M.D., *Director of the Juvenile Psychopathic Institute, Chicago*, Winnetka, Illinois
- MEYER BLOOMFIELD, A.B., *Director of the Vocation Bureau, Boston*, 6 Beacon St., Boston
- RICHARD FREDERICK SCHOLZ, Ph.D., *Assistant Professor of Ancient History, University of California*, Berkeley, California
- DEAN PUTNAM LOCKWOOD, Ph.D., *Assistant Professor of Classical Philology in Columbia University*, New York, New York
- HERBERT MELVILLE BOYLSTON, S.B., A.M., *Consulting Metallurgical Engineer*, 55 Claremont Ave., Arlington Heights
- NORMAN FOERSTER, A.M., *Instructor in English in the University of Wisconsin*, Madison, Wisconsin

#### IN CHARGE OF HISTORICAL EXCURSIONS

- WILLIAM EDWIN DORMAN, A.B., LL.B., formerly *Assistant in History*, Item Building, Lynn
- GUY NEWHALL, A.B., LL.B., formerly *Assistant in Government*, Item Building, Lynn



## LIST OF COURSES

### BOTANY

- S7. Classification and Distribution of Flowering Plants, with special reference to the Flora of New England and the Maritime Provinces. — Lectures, laboratory work, and excursions. Asst. Professor MERRITT L. FERNALD. Tuition fee, \$30; excursion expenses additional.

This course is accepted as a half-course for A.B., A.A., and S.B. Students in Harvard College who take Botany S7 can count Botany 7 only as a half-course. The course will be given only in case at least five persons apply for it.

### CHEMISTRY

- S1. Elementary Theoretical and Descriptive Chemistry. — Lectures and laboratory work. Asst. Professor GREGORY P. BAXTER. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$5.\*

This course is accepted as a half-course for A.B., A.A., and S.B. It is accepted in fulfilment of the entrance requirement in chemistry for Harvard or Radcliffe College, and is also adapted to meet the requirement for admission to the Harvard Medical School. Students in Harvard College who have passed Chemistry S1 are admitted to Chemistry *B*. If Chemistry S1 is counted for a degree, Chemistry *A* may be counted as a half-course only.

- S2. Organic Chemistry. — Lectures and laboratory work. (Instructor's name to be announced later.) Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$10.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry *A* or *1a* or their equivalents. For students in Harvard College it cannot be counted in addition to Chemistry 2.

- S3. Qualitative Analysis. — Lectures and laboratory work. Dr. GEORGE S. FORBES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$5.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry *A* or *1a* or their equivalents. For students in Harvard College it may be substituted for the first half of Chemistry 3; and if Chemistry S3 is counted for a degree, Chemistry 3 will count as a half-course only.

\* If (as is usually the case) the actual breakage comes to less than the sum deposited, any balance remaining at the end of the session will be returned to the student; if the deposit is insufficient, an additional charge will be made.

- S4. Quantitative Analysis. — Laboratory work. Asst. Professor GREGORY P. BAXTER. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$10.\*

This course is accepted as a half-course for A.B., A.A., and S.B. It is not, however, the equivalent of either half of Chemistry 4, and will not be accepted in Harvard or Radcliffe College as sufficient preparation for more advanced work in chemistry, but properly qualified students will be given the opportunity to perform the laboratory work of either the first or second half-year of Chemistry 4. In this case, students in Harvard College can count Chemistry 4 in addition to Chemistry S4 as a half-course only.

- S6. Physical Chemistry. — Lectures and laboratory work. Dr. GRINNELL JONES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$10.\*

This course is accepted as a half-course for A.B., A.A., and S.B. Students in Harvard College who satisfactorily complete this course will be admitted to Chemistry 6 without having taken Chemistry 8, and may also omit the laboratory work in Chemistry 6. Chemistry 6 taken in this way will count as a half-course only.

- S13. Experimental Electro-chemistry. Dr. GEORGE S. FORBES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$10.\*

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Chemistry 13.

#### COURSES FOR ADVANCED STUDENTS

- S20f. Research in Inorganic and Physical Chemistry. Asst. Professor GREGORY P. BAXTER.

- S20h. Research Course. Dr. GEORGE S. FORBES.

- S20i. Research in Physical Chemistry. Dr. GRINNELL JONES.

Properly qualified students will be given the opportunity to perform the laboratory work in Chemistry 9 and Chemistry 10 during the summer session.

#### ECONOMICS

- S1. Principles of Economics. Asst. Professor OLIVER M. W. SPRAGUE. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. It does not count toward the A.B. or S.B. degree for students in Harvard College.

- S2. Economic History of Europe and the United States during the Nineteenth Century. Professor EDWIN F. GAY. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Economics 2.

\* See note, p. 19.

## EDUCATION

**S2a.** General Principles of Education. Asst. Professor HENRY W. HOLMES.  
Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education A.

**S3a.** Organization and Administration of Schools and School Systems. Professor ERNEST C. MOORE, Yale University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3a.

**S3c.** Elementary Education.—Programmes of study, administration, methods. Asst. Professor HENRY W. HOLMES. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3c.

**SC.** History of Modern Education. Professor ERNEST C. MOORE, Yale University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education C.

**S7.** Vocational Guidance.—The theory and practice of vocational guidance. Mr. MEYER BLOOMFIELD, Vocation Bureau, Boston. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. It does not count toward the A.B. or S.B. degree for students in Harvard College.

## ENGINEERING SCIENCES AND ENGINEERING

## SURVEYING

The following courses will be given at the Harvard Engineering Camp, Squam Lake, N. H. Men only can be admitted.

For men who have not paid a full year's tuition in Harvard College the fees for 1913 will be as follows:—

For Engineering Sciences 4a .....	\$70
“ “ “ 4d .....	86
“ “ “ 4a and first half of 4d .....	113

The fee covers board, lodging in a tent, laboratory charges (but not break-ages), and tuition.

\*ENGINEERING SCIENCES 4a hf. Surveying. — Use of instruments; plane and topographical surveying; levelling; map drawing and field practice. *Five weeks, beginning Saturday, June 21.* Asst. Professor H. J. HUGHES, and assistants.

Open to students who have studied plane trigonometry.  
See note after Course 4d.

\*ENGINEERING SCIENCES 4d. Railroad Surveying. — Railroad curves and location; field and office practice. *Six weeks, beginning at the close of Course 4a.* Asst. Professor H. J. HUGHES, and assistants.

Open to students who have passed satisfactorily in Course 4a or its equivalent.

NOTE ON COURSES 4A AND 4D. — Course 4a and the first three weeks of Course 4d, if both are taken in the same summer, may be counted as one course toward the degree of A.B., A.A., and S.B. Course 4a taken alone counts as one half-course toward A.B., A.A., and S.B. Course 4d taken alone counts as one full course toward A.B., A.A., and S.B.

*For further information address Professor H. J. Hughes, 114 Pierce Hall, Cambridge, Massachusetts.*

#### SHOPWORK

The courses in Shopwork, given in the shops of the Rindge Technical School, Cambridge, are specially adapted for teachers of Manual Training, and those preparing for that work. The laboratory work is supplemented by lectures and by visits to workshops in the vicinity of Cambridge. Men only are admitted. All four courses may be taken in one summer. The fees cover laboratory charges and tuition.

#### ENGINEERING SCIENCES 10.

\*a. Chipping, Filing, and Fitting. — Use of hand tools. Fitting by hand. Study of the metals in practical working. Lectures and laboratory work. *Ninety hours. Four weeks, beginning June 23.* Mr. EDWARD R. MARKHAM.

\*b. Blacksmithing. — Use of tools. Forging, welding, tool-dressing, and tempering. Lectures and laboratory work. *Ninety hours. Four weeks, beginning June 23.* Mr. EDWARD R. MARKHAM.

The hours of Courses 10a and 10b are so arranged that both can be taken in the same summer.

\*c. Pattern Making and Foundry Practice. — Use of wood-working tools. Casting in iron and alloys. Lectures and laboratory work. *Ninety hours. Four weeks, beginning July 21.* Mr. EDWARD R. MARKHAM.

\* See note, p. 23.

\*e. Machine Shop Practice. — Use of machine tools. Construction of parts of machinery. Finishing and assembling parts. Lectures and laboratory work. *Ninety hours. Four weeks, beginning July 21.* Mr. EDWARD R. MARKHAM.

Courses 10c and 10e can both be taken at the same time.

*For further information address Professor F. L. Kennedy, Pierce Hall, Cambridge, Massachusetts.*

### MUNICIPAL SANITATION

Municipal Hygiene and Sanitation. — Water supply; sewerage; air; garbage; financial considerations; vital statistics and their use; sanitary biology; and field and laboratory studies in applied sanitation. Professor G. C. WHIPPLE, Dr. BUNKER, and Mr. SCHATTSCHNEIDER. Tuition fee, \$30. Laboratory fee, \$10.

The course will begin on June 30 and end August 9 — six weeks.

Two lectures daily from Monday to Friday inclusive, at least fifteen hours of laboratory work per week, and about fifteen field trips for study and inspection.

The course is arranged with especial reference to those who are teaching these subjects in other institutions, and for students in civil engineering, sanitary engineering, municipal government, and sociology, and for public health officers.

NOTE. — *This course is substantially equivalent to Course 9K in the Harvard School of Engineering, and will be accepted as such for qualified students in or about to enter the School.*

*Persons desiring to take this course should write to Professor George C. Whipple, Pierce Hall, Harvard University, Cambridge, Mass., before June 15, 1913, stating their qualifications for undertaking the work.*

### ENGINEERING

The Harvard School of Engineering is in session throughout the calendar year; and certain courses in the regular programmes occur in the summer. Such courses may be taken by special arrangement by college graduates, graduates of other technical schools, and other mature men who are thoroughly qualified, but *not by undergraduates*. The subjects to be given in the summer of 1913 are as follows: —

Plane and Topographic Surveying. — *Four weeks at the Engineering Camp, Squam Lake, N. H., beginning June 21.*

\* All four of the above courses may be taken in one summer, and together they may be counted towards the degree of S.B. or A.A. in Harvard College as the equivalent of one and one-half courses. Taken separately, either one or two courses will count as a quarter-course each; if three are taken, they will count as a whole course.



Railroad Surveying. — *Four weeks at the Camp, beginning July 19.*

Elementary Mechanics and Drawing. — *Five weeks at the Camp, beginning August 16.*

Road Engineering. — *Two and one-half weeks at the Camp, beginning June 21.*

Railroad Engineering. — *Three and one-half weeks at the Camp, beginning July 10.*

Mechanics of Structures, including Reinforced Concrete. — *Five weeks at the Camp, beginning August 4.*

Limnology (Physics and Biology of Lakes and Reservoirs). — *Ten half-days at the Camp. Time to be announced.*

Sanitary Engineering Laboratory. — *Two weeks in Cambridge, beginning September 8; to be continued for regular students in the following term.*

Direct and Alternating Currents, and Direct-Current Machinery. — *Eleven weeks, about half at the Camp and the remainder at Cambridge, beginning June 21.*

*For further information about courses in the School of Engineering address the Chairman, Professor H. J. Hughes, 114 Pierce Hall, Cambridge, Mass.*

## ENGLISH

SA. English Composition and Methods of Teaching. — Lectures, recitations, written exercises, and conferences. Mr. H. ROBINSON SHIPHERD. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. and S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (Origin and Development of English Literature, not given in 1913) is offered as the equivalent of the other half. Neither English SA nor English S28 can be counted for a degree in addition to English A.

SB. English Composition (second course). — Lectures, daily themes, longer themes, and conferences. Mr. NORMAN FOERSTER, University of Wisconsin. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. or S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (Origin and Development of English Literature in Outline, not given in 1913) is offered as the equivalent of the other half. Neither English SB nor English S28 may be counted for a degree in addition to English A.

- SC. English Composition (third course). — Lectures, short themes, longer themes, and conferences. Mr. HOWARD J. SAVAGE. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. and S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (Origin and Development of English Literature in Outline, not given in 1913) is offered as the equivalent of the other half. Neither English SC nor English S28 may be counted for a degree in addition to English A.

- S1. Chaucer. Dr. K. G. T. WEBSTER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., S.B., and A.A., but for students in Harvard College cannot be counted in addition to English 1.

- S3. Anglo-Saxon. Professor FREDERICK TUPPER, Jr., University of Vermont. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to English 3a.

- S45. History of English Literature in the Nineteenth Century. Asst. Professor CHARLES T. COPELAND. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

- S70. Shakespeare. Professor FREDERICK TUPPER, Jr., University of Vermont. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A. and S.B.

## FRENCH

- S1. French for Teachers. — Reading and composition. Mr. GEORGE L. LINCOLN. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 1, and for Seniors in Harvard College cannot be counted toward a degree.

- S2. French Conversation. Mr. LOUIS J. A. MERCIER. Tuition fee, \$20; if taken in addition to another course in French, the fee is \$10.

This course cannot be counted toward any degree.

- S3. French Literature in the Nineteenth Century. Mr. LOUIS J. A. MERCIER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 7.

- S4. Second-year College French. — Reading, grammar and composition. Dr. ARTHUR F. WHITEM. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted in addition to French 1 by students in Harvard College, or by students who have passed in Advanced French for admission to college, and cannot be counted toward a degree by Seniors in Harvard College.

## GEOLOGY

- S5. Field Geology. — Field work in the Rocky Mountains. Mr. WINTHROP P. HAYNES. Fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S20c. *Section A.* Geological and Petrographical Field Studies. Professor JOHN E. WOLFF.

There is no fee charged in this course except the registration fee.

This course is accepted as a half-course for A.B., A.A., and S.B., if pursued for five weeks; as a full course if pursued for ten weeks.

- S20c. *Section B.* Structural or Glacial Field Work. Associate Professor JAY B. WOODWORTH.

The work may be done in Montana, with the camps of Course S5 as a base, in which case a fee of \$20 will be charged in addition to the charges for transportation and subsistence.

This course is accepted as a half-course for A.B., A.A., and S.B., if pursued for five weeks; as a full course if pursued for ten weeks.

## GERMAN

- S3. German Literature. — Dramatists of the Nineteenth Century. Dr. HERMANN J. WEBER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to both German 26a and 26b.

- S4. Second-year College German. — German prose and poetry; grammar and practice in writing German. Mr. ASBURY H. HERRICK. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted by students in Harvard College who have passed any elective course in German, or who have passed in Advanced German for admission to College.

## GOVERNMENT

- S1. Comparative Modern Government. Professor EPHRAIM D. ADAMS, Leland Stanford Jr. University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 1.

## HISTORY

- S1. History of the United States from 1865 to the present day. Professor EPHRAIM D. ADAMS, Leland Stanford Jr. University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 13.

- S2. Modern European History from the Reformation. Dr. ROBERT H. LORD. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 1 as given in 1912-13, or History 2a and 2b.

- S3. Ancient History. Asst. Professor R. F. SCHOLZ, University of California. Tuition fee, \$30; two lectures a day.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 3 or History 4.

## LATIN

- S1. Latin for Teachers. — Grammar, methods of teaching. Asst. Professor DEAN P. LOCKWOOD, Columbia University. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

- S2. Horace. Asst. Professor DEAN P. LOCKWOOD, Columbia University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

## MATHEMATICS

- SK. Logarithms and Trigonometry. — Lectures and problems. Mr. HARRY D. GAYLORD. Tuition fee, \$30.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted by students in Harvard College in addition to Mathematics A, B, or K, or by students who have counted trigonometry for admission.

- SM. Logarithms and Trigonometry, with special reference to the needs of teachers of high school mathematics. — Lectures and problems. MR. HARRY D. GAYLORD. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

- S2. Calculus. — Lectures and problems. Professor WILLIAM F. OSGOOD. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

### METALLURGY

- S12. Metallography. — Lectures, laboratory work, and reading. Mr. HERBERT M. BOYLSTON. Tuition fee, \$40. The fee includes the laboratory charge.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted as a half-course for S.B., provided they have also passed Metallurgy 11 or its equivalent.

### MUSIC

- S1. Appreciation of Music. — Analytical study of masterpieces from the point of view of the listener. Associate Professor WALTER R. SPALDING. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Music 4.

- S2. Elementary Harmony. Dr. ARCHIBALD T. DAVISON, Jr. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Music 1.

### PHILOSOPHY

- S5. Present Philosophical Tendencies. Professor RALPH B. PERRY. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Philosophy 18.



## PHYSICAL EDUCATION

Courses in Theory. — Graded series, covering four years and including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, Methods and Practice of Teaching, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

Courses in Practice. — Graded series, covering four years and including Swedish and German Floor Work, Gymnastic Games, Field and Track Athletics, Aesthetic and Folk Dancing, Corrective Gymnastics, Playground Work, etc. Dr. DUDLEY A. SARGENT, *Director*, with thirty instructors and ten assistants. Fee, \$25.

*A special circular containing full particulars will be sent on application to the Director, Dr. Dudley A. Sargent, Harvard University, Cambridge, Mass.*

## PHYSICS

SB. Elementary Experimental Physics for Teachers. — Lectures, laboratory work, reading, and problems. Dr. HARVEY C. HAYES. Tuition fee, \$30; two lectures a day.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Physics B, nor to remove an entrance condition in Elementary Science.

## PSYCHOLOGY

S1. Descriptive Psychology. — Lectures, reading, class experiments, and reports. Asst. Professor ROBERT M. YERKES. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Philosophy E.

S2. Educational Psychology. — Lectures, reading, experimental exercises, and reports. Asst. Professor ROBERT M. YERKES. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B. For students in Harvard College it may be counted in addition to Philosophy E, but not in addition to Philosophy 28.

S3. Psychology of the Abnormal. — The psychology and practical training of the mentally and morally abnormal, with especial reference to children. — Lectures, clinics, and reports. Dr. WILLIAM HEALY of the Juvenile Psychopathic Institute, Chicago. Tuition fee, \$30.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

## PUBLIC SPEAKING\*

- S1. Vocal Technique in Speaking and Reading. Professor CALVIN L. LEWIS, Hamilton College. Fee, \$20.
- S3. Public Speaking. — Training in the delivery of both selected and original speeches. Professor CALVIN L. LEWIS, Hamilton College. Tuition fee, \$20.
- S4. Vocal Interpretation of English Prose and Poetry, primarily for teachers of English. Asst. Professor IRVAH L. WINTER and an assistant. Tuition fee, \$20.
- S7. Vocal Technique and Platform Delivery. — Advanced course for teachers of public speaking and reading, and other qualified students. Asst. Professor IRVAH L. WINTER and an assistant. Tuition fee, \$20.

## SOCIOLOGY

- S1. Sociology and Contemporary Social Problems. Asst. Professor OLIVER M. W. SPRAGUE. Tuition fee, \$20.
- This course is accepted as a half-course for A.B., A.A., and S.B.

## SPANISH

- S1. Elementary Spanish. — Reading, grammar, and composition. Mr. GEORGE L. LINCOLN. Tuition fee, \$20.
- This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Spanish 1, and for Seniors in Harvard College cannot count toward any degree.
- S2. Advanced Course in Reading and Composition. Mr. GEORGE L. LINCOLN. Tuition fee, \$20.
- This course cannot be counted toward any degree, and will not be offered unless at least five persons apply for it.

\* Any two of the courses in Public Speaking may together be counted as a half-course toward the degree of A.B., A.A., or S.B., provided no course in Public Speaking in Harvard College has been so counted. For students in Harvard College, summer courses in Public Speaking cannot be counted in addition to any courses given in regular term-time.

The fee is \$20 for one course; on payment of an additional fee of \$10 the student will have the right to take regularly one additional course in Public Speaking and Reading, and to attend a third course as an Auditor.









## SUMMER SCHOOL OF ARTS AND SCIENCES

Fuller descriptions of the courses in the several departments will be sent on application.

The Dean will be grateful to any one who will send him the addresses of teachers and others who might like to receive information about the Summer Courses.

Address: Dr. K. G. T. Webster,  
19 University Hall,  
Cambridge, Mass.

---

To the Secretary of the Harvard Summer School of Arts and Sciences, 19 University Hall, Cambridge, Mass.:—

Please send me the full description of the courses in.....

.....

*Name,* .....

*Address,* .....

.....

.....

---

OFFICIAL REGISTER OF HARVARD UNIVERSITY, entered, March 24, 1905, at Boston, Mass., as second-class matter, under Act of Congress of July 16, 1894. Issued at Cambridge Station, Boston, Mass., six times a year.

C  
bu2s  
916

# OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOLUME XIII

MARCH 15, 1916

NO. V, PART 2

## ANNOUNCEMENT

OF THE

## SUMMER SCHOOL OF ARTS AND SCIENCES

JULY 10 — AUGUST 19, 1916

UNIVERSITY OF ILLINOIS LIBRARY

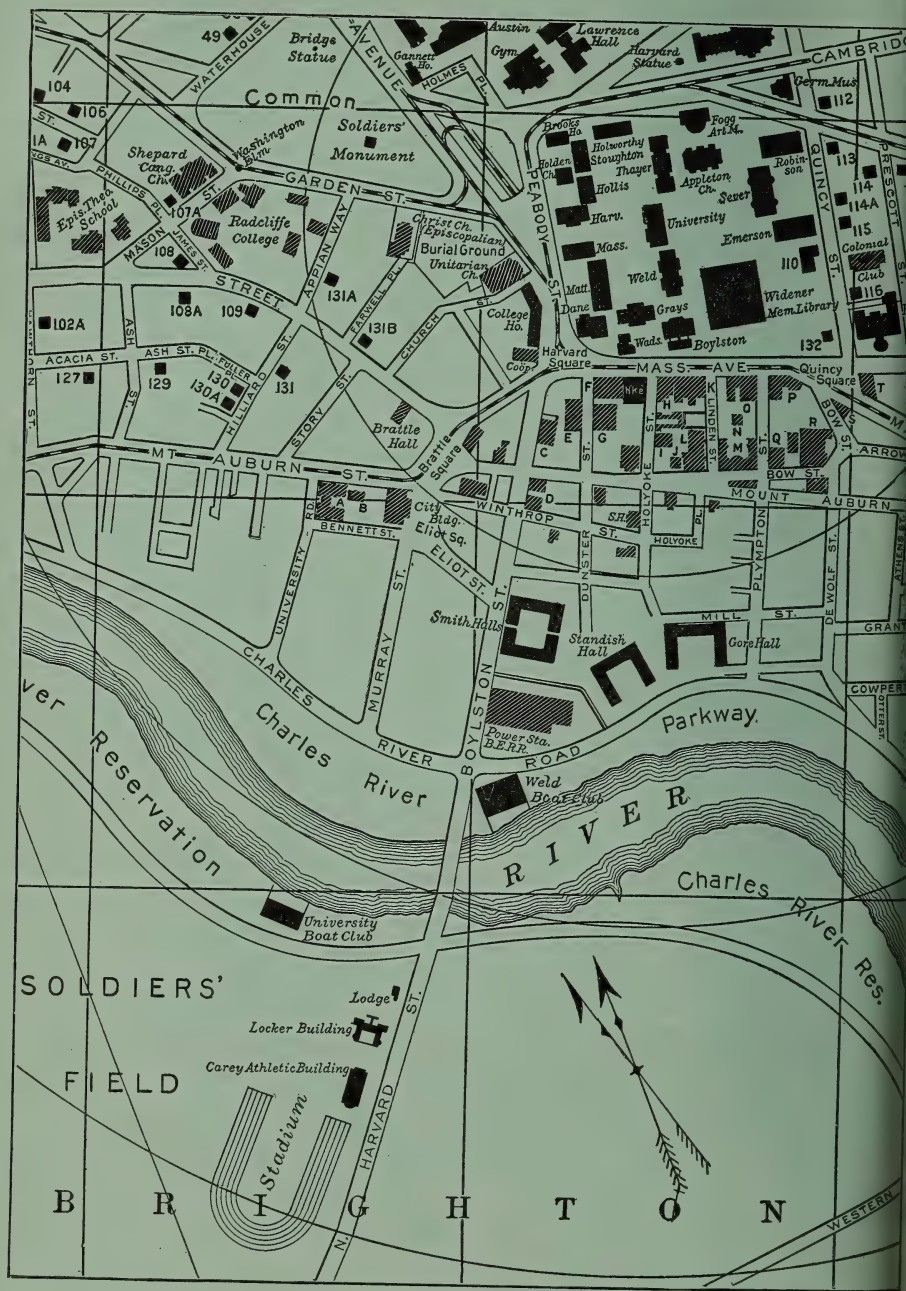


UNIVERSITY OF ILLINOIS

SEP 17 1917

Administrative Library

PUBLISHED BY HARVARD UNIVERSITY  
CAMBRIDGE, MASS.



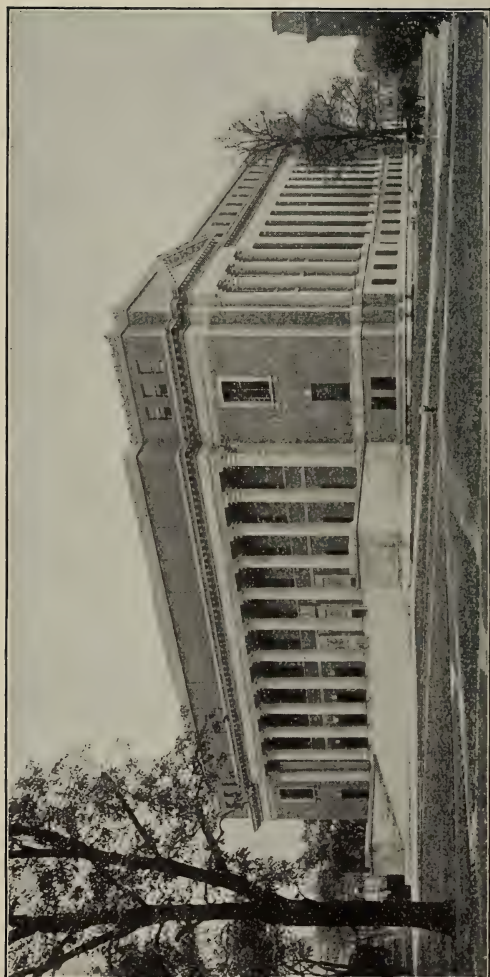
HARVARD SQUARE AND VICINITY

ANNOUNCEMENT  
OF THE  
SUMMER SCHOOL OF ARTS  
AND SCIENCES

JULY 10—AUGUST 19, 1916



CAMBRIDGE  
PUBLISHED BY THE UNIVERSITY  
1916



THE WIDENER LIBRARY



# OFFICERS OF THE SUMMER SCHOOL OF ARTS AND SCIENCES

1916

---

## PRESIDENT

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., Ph.D.

## ADMINISTRATIVE BOARD

JAMES HARDY ROPES, A.B., D.D., *Hollis Professor of Divinity*, DEAN IN CHARGE OF UNIVERSITY EXTENSION.

KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Instructor in English*, DIRECTOR OF THE SUMMER SCHOOL OF ARTS AND SCIENCES.

JOSIAH ROYCE, Ph.D., LL.D., Litt.D., D.Sc., *Alford Professor of Natural Religion, Moral Philosophy, and Civil Polity*.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and Art of Teaching*.

CLIFFORD HERSCHEL MOORE, Ph.D., Litt.D., *Professor of Latin*.

ERNEST CARROLL MOORE, LL.B., Ph.D., *Professor of Education*.

GEORGE WASHINGTON PIERCE, Ph.D., *Assistant Professor of Physics*, and *Director of the Croft High Tension Laboratory*.

HECTOR JAMES HUGHES, A.B., S.B., *Professor of Civil Engineering*, and *Director of the Engineering Camp*.

WILLIAM BENNETT MUNRO, Ph.D., LL.B., LL.D., *Professor of Municipal Government*.

ARTHUR FISHER WHITTEM, Ph.D., *Assistant Professor of Romance Languages*.

## SECRETARY

HELEN FRANCES NORTON,

19 University Hall

## INSTRUCTORS

ROGER ADAMS, Ph.D., *Instructor in Chemistry*, 7 Riedesel Ave.

WALLACE WALTER ATWOOD, Ph.D., *Professor of Physiology*, 48 Lake View Ave.

GEORGE PIERCE BAKER, A.B., Litt.D., *Professor of Dramatic Literature*, 195 Brattle St.

GREGORY PAUL BAXTER, Ph.D., *Professor of Chemistry*, Coolidge Memorial Laboratory

- GEORGE DAVID BIRKHOFF, Ph.D., *Assistant Professor of Mathematics*, 44 Shepard St.
- JOHN MARKS BREWER, S.B., A.M., *Fellow for Research in Vocational Guidance*, 37 Concord Ave.
- ARCHIBALD CARY COOLIDGE, Ph.D., *Professor of History, and Director of the University Library*, Randolph 4
- CHARLES TOWNSEND COPELAND, A.B., *Assistant Professor of English*, Hollis 15
- WALTER FENNO DEARBORN, Ph.D., M.D., *Assistant Professor of Education*, 15 Alden Road, Watertown
- GEORGE HAROLD EDGELL, Ph.D., *Assistant Professor of Fine Arts*, 9 Traill St.
- GEORGE SHANNON FORBES, Ph.D., *Assistant Professor of Chemistry*, 2 Prescott St.
- JAMES FORD, Ph.D., *Assistant Professor of Social Ethics*, 35 Walker St.
- EDWIN FRANCIS GAY, Ph.D., *Professor of Economics, and Dean of the Graduate School of Business Administration*, 57 Francis Ave.
- HARRY DAVIS GAYLORD, S.B., *Graduate Student, formerly Instructor in Mathematics*, 104 Hemenway St., Boston
- CHESTER NOYES GREENOUGH, Ph.D., *Professor of English*, 26 Quincy St.
- CLARENCE HENRY HARING, A.B., Litt.B., *Assistant in History*, 10 Mellen St.
- CHARLES HOMER HASKINS, Ph.D., A.M., Litt.D., LL.D., *Gurney Professor of History and Political Science, and Dean of the Graduate School of Arts and Sciences*, 53 Francis Ave.
- WINTHROP PERRIN HAYNES, Ph.D., *Assistant in Geology*, 74 Beacon St., Hyde Park
- ASBURY HAVEN HERRICK, Ph.D., *Instructor in German*, 34 Maple Ave.
- REINHOLD FRIEDRICH ALFRED HOERNLÉ, M.A., B.Sc., *Assistant Professor of Philosophy*, 2 Shady Hill Square
- ARTHUR NORMAN HOLCOMBE, Ph.D., *Assistant Professor of Government*, 21 Follen St.
- HECTOR JAMES HUGHES, A.B., S.B., *Professor of Civil Engineering, and Director of the Engineering Camp*, 6 Clement Circle
- JOHN SANFORD HUMPHREYS, *Assistant Professor of Architectural Design*, 42 Bowdoin St.
- ALEXANDER JAMES INGLIS, Ph.D., *Assistant Professor of Education*, 3 Linnaean St.
- GEORGE ELLSWORTH JOHNSON, A.M., *Instructor in Education*, 1673 Cambridge St.
- GRINNELL JONES, S.M., Ph.D., *Instructor in Chemistry*, 39 Ellery St.

- CHARLES WILSON KILLAM, *Associate Professor of Architectural Construction*, 51 Avon Hill St.
- JULIUS KLEIN, Ph.D., *Instructor in History*, 35 Lee St.
- ARTHUR BECKET LAMB, Ph.D., *Assistant Professor of Chemistry, and Director of the Chemical Laboratory*, Apley 1
- FREDERICK WILLIAM CHARLES LIEDER, Ph.D., *Instructor in German*, Holyoke 6
- GEORGE LUTHER LINCOLN, A.M., *Instructor in Romance Languages*, 2000 Commonwealth Ave., Boston
- MARTIN MOWER, *Instructor in Fine Arts*, 84 Prescott St.
- WILLIAM FOGG OSGOOD, Ph.D., LL.D., *Perkins Professor of Mathematics*, 74 Avon Hill St.
- WILLIAM GRAVES PERRY, A.B., S.B., *Architecte Diplômé par le Gouvernement Français, Instructor in Architectural Design*, 135 Beacon St., Boston
- EUGÈNE LOUIS RAICHE, *Instructor in French*, 39 Linnaean St.
- DUDLEY ALLEN SARGENT, M.D., A.M., S.D., *Director of the Hemenway Gymnasium*, 27 Everett St.
- FRIEDRICH SCHOENEMANN, Ph.D., *Instructor in German*, 3 Avon St.
- ARTHUR PARKER STONE, A.B., LL.B., *Instructor in English*, 613 Pleasant St., Belmont
- KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Instructor in English, and Director of the Summer School of Arts and Sciences*, Gerry's Landing
- GEORGE BENSON WESTON, A.M., *Instructor in Romance Languages*, 21 Craigie St.
- GEORGE CHANDLER WHIPPLE, S.B., *Gordon McKay Professor of Sanitary Engineering*, 6 Berkeley Place
- ARTHUR FISHER WHITTEM, Ph.D., *Assistant Professor of Romance Languages*, 9 Vincent St.
- GEORGE GRAFTON WILSON, Ph.D., LL.D., *Professor of International Law*, 6 Acacia St.
- IRVAH LESTER WINTER, A.B., *Associate Professor of Public Speaking*, Hubbard Park
- JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography and Mineralogy, and Curator of the Mineralogical Museum*, 300 Hammond St., Chestnut Hill
- JAY BACKUS WOODWORTH, S.B., *Associate Professor of Geology*, 44 Avon Hill St.
- PHILIP GREEN WRIGHT, A.M., *Instructor in Economics, and Tutor in the Division of History, Government, and Economics*, 72 Fayerweather St.

## VISITING INSTRUCTORS

- CHARLES RICKETSON ALLEN, *Agent for Industrial Education,*  
*Massachusetts State Board of Education,* Ford Building, Boston
- FRANK WASHINGTON BALLOU, Ph.D., *Director of Investigations,* School Department, Boston
- GEORGE HUBBARD BLAKESLEE, Ph.D., *Professor of History and International Relations,* Clark University, Worcester
- SMILEY BLANTON, M.D., *Instructor in Public Speaking,* University of Wisconsin, Madison, Wis.
- EDWARD HERBERT CAMERON, Ph.D., *Assistant Professor of Psychology,* Yale University, New Haven, Conn.
- HENRY HUNT CLARK, *Instructor in Design at the Museum School of Fine Arts,* Boston, 15 Kirkland Road, Cambridge
- JOHN CORSA, M.A., *Associate Professor of Public Speaking,* Amherst College, Amherst
- THOMAS CROSBY, JR., A.M., *Associate Professor of English and Public Speaking,* Brown University, Providence, R. I.
- RHYS DAFYDD EVANS, A.B., *Instructor in Physics,* Bowdoin College, Brunswick, Me.
- WALTER ELMORE FERNALD, M.D., A.M., *Superintendent of the Massachusetts School for the Feeble-Minded at Waverley,* Waverley
- ROY FOLLETT, A.B., *Instructor in English,* Brown University, Providence, R. I.
- JOSEPH SEARLE GAYLORD, A.M., *Instructor in Psychology and Education,* State Normal School, Winona, Minn.
- HORACE MEYER KALLEN, Ph.D., *Instructor in Philosophy,* University of Wisconsin, Madison, Wis.
- LEO RICH LEWIS, A.M., *Professor of the History and Theory of Music,* Tufts College, Tufts College
- WILLIAM MACDONALD, Ph.D., LL.D., *George L. Littlefield Professor of American History,* Brown University, Providence, R. I.
- GEORGE MCFARLAND MCKIE, A.M., *Associate Professor of Public Speaking,* University of North Carolina, Chapel Hill, N. C.
- HENRY ROBINSON SHIPHERD, Ph.D., *Professor of English,* Pennsylvania College, Gettysburg, Pa.
- CHARLES NEWTON SMILEY, Ph.D., *Benedict Professor of the Latin Language and Literature,* Grinnell College, Grinnell, Ia.
- CHARLES SWAIN THOMAS, *Head of the Department of English,* Newton High School, 15 Claflin Road, Newtonville
- BENJAMIN CARLTON VAN WYE, A.M., *Assistant Professor of Public Speaking and English,* University of Cincinnati, Cincinnati, O.

## ORGANIST AND CHOIR-MASTER

- ARTHUR MAIN PHELPS, 11 Magnolia St., Arlington

# SUMMER SCHOOL OF ARTS AND SCIENCES

MONDAY, JULY 10, TO SATURDAY, AUGUST 19, 1916

---

## HARVARD UNIVERSITY

THE history and environment of Harvard University have been described as follows: —

“Harvard University, founded as a college in 1636, was for over half a century, until the founding in 1693 of the College of William and Mary in Virginia, the only college in the country. The name of the town where it was established was changed from Newtowne to Cambridge in honor of the English university where many of the leading colonists had been educated. Although only three miles inland on the banks of the Charles, Cambridge was at that time a frontier settlement, a fact of which there is still lingering evidence in the clumps of willows, sprouts from the old stockade against the Indians, standing in a part of the college grounds.

“The College is the centre of Old Cambridge. From it westward and northward run the three principal streets,

Cambridge Brattle Street, past the houses of Longfellow and Lowell; Garden Street, past the elm under which Washington first reviewed the American army, and past the Observatory and the Botanic Garden; and Massachusetts Avenue, leading to Lexington and Concord, the road along which the British soldiers retreated after the first battle of the Revolution. Near where Garden Street and Massachusetts Avenue separate, on Holmes Place, stood the house in which were the headquarters of General Ward and

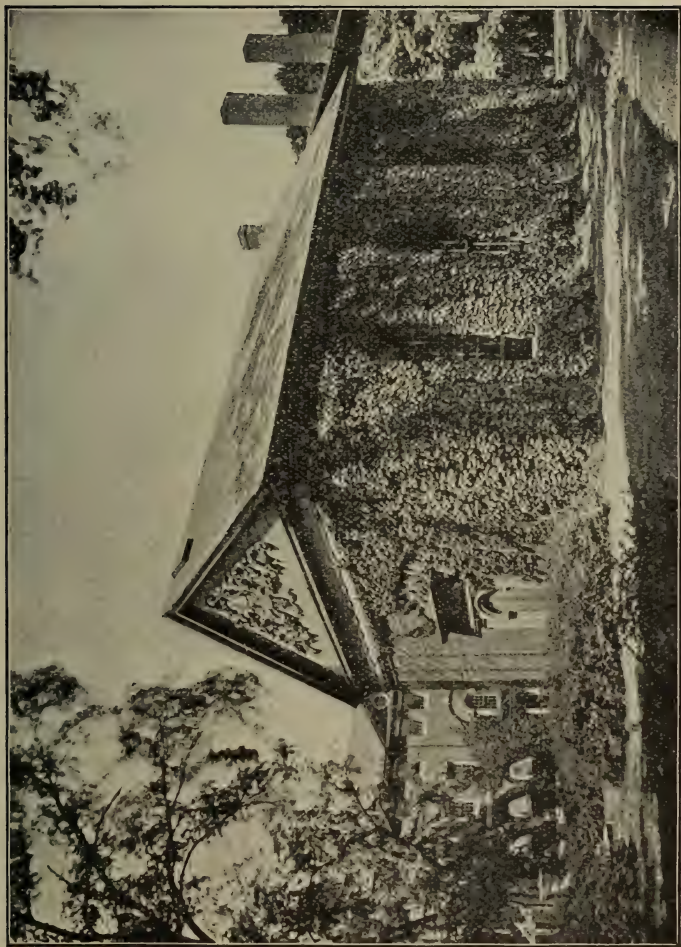


of the Committee of Public Safety in 1775, and in which Dr. Oliver Wendell Holmes was born. On the neighboring stretch of green, in front of the present Harvard Law School, Samuel Langdon, President of Harvard College, that 'hotbed of sedition,' offered prayer on the evening of June 16, 1775, for the Continental troops there assembled under Colonel Prescott and about to march to Bunker Hill. Across the street is a group of buildings, Massachusetts, Harvard, and Hollis Halls, and little Holden Chapel, which date back to prerevolutionary times. During one period of the Revolution the College was removed to Concord, and these buildings were used as quarters for the Continental Army.

"The Harvard Library, now in the new Harry Elkins Widener Memorial building, is in size at least the fourth, and possibly the third, library in the country, **Libraries** — the Library of Congress being first. It contains at present about 755,000 books and 437,000 pamphlets.

"Close at hand is the Boston Public Library, another of the greatest importance. Still other libraries, such as the Boston Athenaeum, the State Library, the library of the Massachusetts Historical Society, the library of the American Academy of Arts and Sciences, and the libraries of the Loyal Legion and the Massachusetts Military Historical Society, furnish re-enforcement in particular fields.

"The University derives many advantages from its nearness to Boston. The great collections of paintings, sculpture, and other objects in the Boston Museum of Fine **Boston** Arts offer unsurpassed opportunities of artistic education and enjoyment. Boston is an important musical centre, and is visited by many lecturers and men of note. A terminal centre for railroads and for steamship lines, it affords many and convenient means of communication with the immediate and more distant parts of the country. The highly developed park system of Boston and of the metropolitan district is one of the great charms of the region.



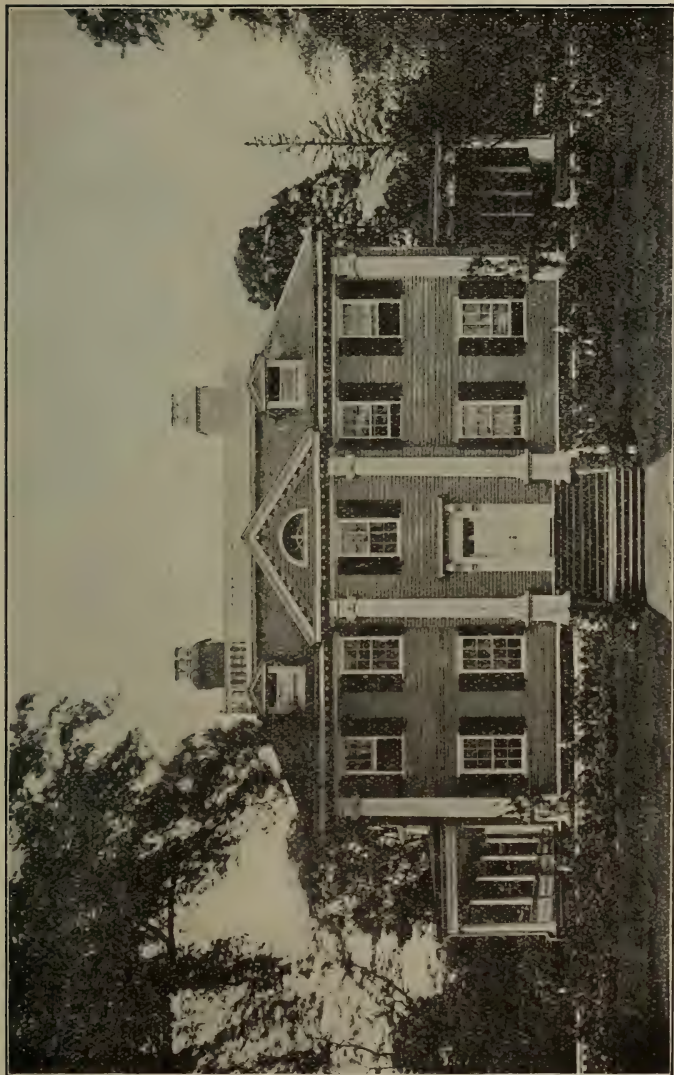
HOLDEN CHAPEL, 1744, AND PHILLIPS BROOKS HOUSE, 1899

"The more distant surroundings of Cambridge, the sea-coast and woods, the lake regions of Maine and the White Mountains of New Hampshire, the Berkshire Hills of Massachusetts, and Cape Cod, afford beautiful and varied scenery for the vacation periods. The steamship service to New Brunswick and Nova Scotia gives, at comparatively slight expense, ready access to a beautiful region for an economical long vacation. The neighboring coast towns of Plymouth, Salem, Marblehead, and Gloucester are reminiscent of Colonial days and are of simple, picturesque beauty.

"The general statistics of the University are as follows: — Its material resources are represented by an invested, income-bearing endowment of about twenty-four million dollars, and buildings, laboratories, and museums, valued at nearly twenty million dollars. The grounds for instruction and research, and for the use of students, include 80 acres in Cambridge for varied University purposes; 63 acres across the river in Boston for athletic purposes; 11 acres for the Medical School buildings in Boston; 394 acres for applied biology, arboriculture, horticulture, and allied subjects, in Jamaica Plain, a suburb of Boston; 700 acres for the Summer Engineering Camp on Squam Lake in the foothills of the White Mountains; and 2000 acres, the Harvard Forest, at Petersham, for field work in forestry; a total of more than 3200 acres. To this list may be added the Arequipa Observatory in Peru.

"On the staff of the University there are 892 officers of instruction, and 145 administrative officers, preachers, curators, etc. Not counting the students in the Summer Schools (1,207), or the students in Radcliffe College (660 women), the number of students in Harvard University at the time of the issue of the Catalogue of 1915-16 was 5,275.

"The rooms of the college buildings have associations with the student days of Rufus Choate, Charles Sumner, Edward Everett, Wendell Phillips, William Fitzhugh Lee;



THE HOUSE OF HENRY WADSWORTH LONGFELLOW



of the historians, John Lothrop Motley, Francis Parkman, George Bancroft, and William H. Prescott; of Ralph Waldo Emerson, Henry David Thoreau, James Russell Lowell, Oliver Wendell Holmes; of Edward Everett Hale and Phillips Brooks, and many other men of note. The Harvard Memorial Society has made these associations more real and personal by posting in each room a printed list of the occupants from the beginning."

To the students in the Harvard Summer School these old associations and surroundings of the oldest American college are offered, as well as the discipline and study of the present-day University summer courses. During the six weeks' session there is abundant opportunity, both in private walks and trips and in more elaborate excursions made under the guidance of competent scholars, to become acquainted with the scenes of historic events and the homes and familiar localities of great writers. Especially those teachers whose work includes American history and literature can find here, more than at any other place in the world, personal contact with historic places significant for this part of their daily teaching.



## THE SUMMER SCHOOL

Summer instruction has been offered at Harvard for forty-five years, a longer period than at any other university in this country. It began in a summer course in botany, organized in 1871 by Professor ASA GRAY, which was soon followed by courses in biology, chemistry, and geology, taught by Professors LOUIS AGASSIZ, JOSIAH P. COOKE, and NATHANIEL S. SHALER. The gradual enlargement of these courses into the Summer School of Arts and Sciences was the work of Professor SHALER.

The Harvard summer courses were primarily established in order to provide University instruction for teachers, and were planned in the belief that *short-term study can be made most effective by concentration on a single subject*. These ideas still control the Harvard Summer School. A student here is expected to enroll regularly in only one course, and to give to that for six weeks his whole time and effort. By work so arranged a good insight can be gained into the principles, the characteristic mode of thought, the main facts, and the best methods of teaching, in an important field of knowledge. A long experience has given increasing confidence in this intensive method of summer study; and only in this way can a large subject be adequately covered in so short a time.

In pursuance of this plan, the work required in any one course will ordinarily fill a student's working time. Since the pace of work is thus more rapid than in term-time, it is possible to make the courses full equivalents of the University "half-course" of the academic year, to which they strictly correspond in standard. The method of instruction varies as may be best adapted to the nature of the subject. Daily lectures are given in each subject, in some cases two lectures each day. With the lectures are combined conferences and recitations, laboratory exercises under supervision, written papers, and reading in the libraries and from text-books.

## GENERAL INFORMATION

### ADMISSION

The courses are open to both men and women, with the exception of courses in Engineering, Geology (field-work), Architecture, and Human Anatomy, which are for men only.

No entrance examination is required for admission to any of the courses. The instructors may, and in many cases should, be consulted beforehand about requisite preparation or preliminary reading. Their addresses are given on pp. 3-6.

In the courses in research and the other courses for graduate and advanced students, only competent students, and in limited number, will be accepted. Students in the research courses may attend without extra charge the lectures of any course in the same subject. For admission to any such course the instructor's permission must be secured in advance.

### REGISTRATION

Lectures in all courses begin on Monday, July 10, 1916. There will be no required exercises on Saturday in any courses other than those in Physical Education and the courses in Biological Science given at the Harvard Medical School, *except on the first Saturday, July 15.*

Students, as soon as they arrive in Cambridge, should register at the Office of the Summer School, which during the six weeks of the summer session is in Sever Hall. On Friday, Saturday, and Monday, July 7, 8, and 10, the Summer School Office will be open for registration from 8 A.M. to 6 P.M. [Regular office hours are from 8.30 A.M. to 4.30 P.M.] Lectures in all courses will begin promptly at the announced hours on Monday morning, July 10. Immediately after registration, all fees, including registration, tuition, and dormitory fees, should be paid to the Bursar. The Bursar's Office is in Dane Hall (on the southeast corner of the College Yard near Harvard Square) and is open daily from 9 A.M. to 1 P.M. No admittance to lectures will be allowed until a student can present a receipt from the Bursar.

## AUDITOR'S TICKET

Students are earnestly advised not to undertake regular work in more than one course, but in addition to the lectures in his main course a student often finds it practicable to attend those in a parallel course. For this an Auditor's Ticket may be obtained, on the additional payment of \$10, by any registered student who has paid the full fee in one course. It will admit to the lectures only in a second specified course, but does not entitle one to laboratory privileges or other special work, or to the final examination in that course.

The privileges of the Auditor's Ticket do not extend to the Physical Education Courses or to the courses at the Medical School.

## EXPENSES

The tuition fee for a course varies from \$10 to \$60, \$20 being the normal amount. Detailed statements will be found below in the List of Courses. In addition a registration fee of \$3 is required of every student registered at the Summer School in Cambridge.

The average necessary expenses in Cambridge for the six weeks of the Summer School, including board and room at one of the Freshman Halls, and tuition fees, may be estimated at \$80-\$90, but with great economy a smaller amount (not less than \$70) can be made to suffice.

*No reduction of fee will be allowed for late entrance, or for withdrawal, except on account of illness or other like serious and unavoidable cause. when one-half of the fee will be returned. In no case will a reduction be allowed when the student is present during more than half the term.*

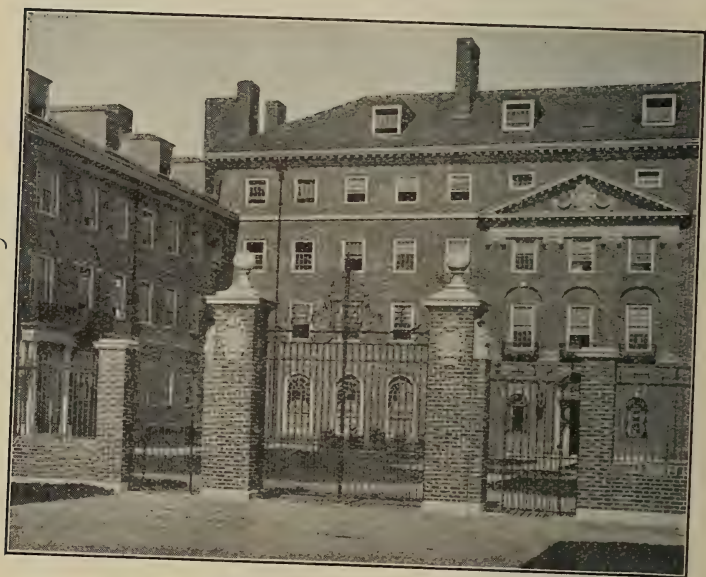
*Money to meet expenses should be brought in cash, bank drafts, cashier's checks, or money orders. Checks or drafts should be drawn on Boston or New York banks in order to save cost of exchange.*

*Private checks are not negotiable.*

## DORMITORY ACCOMMODATIONS

The Harvard Summer School offers accommodations for residence in Standish and Gore Halls, and board in Smith Dining Hall, — the new Freshman Dormitories. Situated a few minutes' walk from the College Yard, within easy reach of the Chapel, lecture halls, gymnasium, and libraries, and facing the river front, they afford oppor-

tunity for an unusually comfortable stay in Cambridge during the six weeks' session of the Summer School. The buildings are modern, fire-proof structures, four stories high, of red brick, with rooms for about 300 persons. Gore Hall will be reserved for men, and Standish Hall for women. Certain suites will also be reserved for married couples. The rooms are arranged in suites, intended to accommodate from one to five persons each. All the bed-rooms are single, and every suite is provided with a study and a bath. The dormitory



GATEWAY, STANDISH HALL

fee, ranging from \$7 to \$10 per week, includes the necessary heavy furniture, — such as bed, chairs, bureau, bookcase, and table, — care of rooms, and board. Linen and towels will be furnished by the College. Accommodations in the dormitory are only for persons registered in the Summer School. No others will be permitted to room there, except in the case of the mother of a student, or of an older friend who acts as a chaperone. There is a large common-room on the first floor of each building, for social and reading purposes. Applications for rooms should be made to the *Secretary of the Summer School, 19 University Hall, Cambridge, Mass.*



GORE HALL



## BOARDING HOUSES AND FURNISHED APARTMENTS

Comfortable furnished rooms near the Harvard Yard are offered for rent in great abundance at prices ranging from \$1 to \$5 per week. Complete apartments (furnished) can be hired at reasonable rates by those who wish to undertake light housekeeping.

Table board can be had in private boarding-houses or in public restaurants at prices ranging from \$5 to \$10 per week.

## RAILROAD AND STEAMSHIP RATES AND SERVICE

The chief railroad stations for Harvard University are the North and South Stations in Boston, from which Cambridge is reached by the Park Street Subway to Harvard Square. Surface lines from the Park Street Subway Station pass the Medical School which is at 240 Longwood Ave., Boston. Baggage should be sent from Boston by the Armstrong Transfer Co. or by express.

By direct steamer lines Boston may be reached, cheaply and comfortably, as follows:—

From *New York*, by the Fall River Line, leaving New York daily at 5 P.M.; by the Providence Line, leaving daily at 5 P.M.; and by the Joy Line (via Providence), leaving every week-day at 5.30 P.M.;

From *Philadelphia*, *Baltimore*, and *Norfolk, Va.*, by the lines of the Merchants' and Miners' Transportation Co., with frequent sailings (on these steamers reduced rates are given to students);

From *Savannah*, by the steamers of the Ocean Steamship Co., sailing twice a week;

From *Charleston, S.C.*, and *Jacksonville, Fla.*, by the Clyde Line, and from *Mobile* and *Galveston* by the Mallory Line, both sailing to New York, where good connection is made for Boston by either rail or steamer.

The Summer School is thus conveniently accessible to students from the more distant as well as the nearer Southern States.

From *Portland*, *Rockland*, *Bangor*, and *Eastport, Me.*, and *St. John, N.B.*, and from *Yarmouth, N.S.* (serving *Digby* and *Halifax*), the steamers of the Eastern Steamship Co. sail either daily or several times a week, and from *Halifax* and *Prince Edward Island* there are weekly sailings by the Plant Line.

Students coming from a distant state who wish to know the names of other students coming from their section of the country, in order that they may not have to travel alone, are advised to consult with the Secretary of the Summer School.

## ACADEMIC CREDIT

The summer courses are University courses, and have the same standards as other Harvard courses. Nearly all are accepted, subject to the established regulations, to count as half-courses for the degrees of *Bachelor of Arts*, *Associate in Arts*, and *Bachelor of Science*. Seminary work, research courses, and the like, are counted for these degrees only in accordance with the specific recommendation of the instructor in each case.

With the previous approval of the proper authorities, advanced work in the Summer School can be counted as part of a programme of work for the degree of *Master of Arts*, but for that degree, as for the degree of *A.B.* or *S.B.*, continuous residence at the University of at least one academic year is required. Summer residence may not be counted as fulfilling part of this academic year of study. Candidates must possess an elementary knowledge of two modern foreign languages (ordinarily French and German), and must pursue, and complete with distinction, a programme of study forming a consistent plan of work, with a definite aim and lying either in one field or in related fields. Such a programme must in every case be approved beforehand by the appropriate Division Committee of the Faculty of Arts and Sciences and by the Administrative Board of the Graduate School of Arts and Sciences.

With reference to the degree of *A.M.*, the summer courses are especially useful to candidates who need more than a full year of resident study for the degree, or who lack some collateral work which cannot conveniently be done during the year of required residence. Moreover, students intending to carry on advanced study at Harvard in the academic year will often find much saving of time, and other advantages for their work in the following winter, if they have already become familiar with the Harvard laboratories, libraries, methods, and teachers, through taking a single course in the preceding summer.

The degree of *Doctor of Philosophy* is not given on the ground of any number of courses taken, or of a stated period of study, but only for high attainment gained by long study in a special field, manifested in examinations and a thesis. For the full requirements for the *Ph.D.* see the *Harvard University Catalogue* for 1915-16, p. 634. Students working for this degree at Harvard or elsewhere, especially while engaged in research for their theses, will be heartily welcomed

at the libraries of the University, and in some departments laboratory opportunities can be offered to them. They will find in the advanced courses of the Summer School opportunity to carry on their work under the advice and supervision of instructors.

For further information with regard to the Graduate School of Arts and Sciences, and the degrees of A.M. and Ph.D., apply to G. W. ROBINSON, *Secretary*, 24 University Hall, Cambridge, Mass.

## EXAMINATIONS AND CERTIFICATES

Examinations and other tests of the same grade as those required in corresponding courses in Harvard College will be held at the close of each course. It is not, however, compulsory to take the final examinations.

In place of the Summer School Certificate previously issued to those students who satisfactorily completed a course with a grade of C, or higher, the Summer School Office will send, beginning with the summer of 1916, an Official Report to all students registered in the Summer School of Arts and Sciences, with a statement of their work as follows:

A, Excellent; B, Good; C, Fair; D, Unsatisfactory; E, Failure.

"Abs." indicates failure to obtain credit for the course, owing to absence from the final examination.

An asterisk (\*) indicates that the course does not count for a degree.

The grades of Harvard students will be reported directly to the Recorder's Office. No Official Report will be sent unless requested.

In Physical Education a special certificate is awarded to those who complete satisfactorily the four years' course. Students are admitted to a summer course, whether they are candidates for the certificate or not.

## HARVARD STUDENTS

For students in Harvard College, grades in Summer School courses will be accepted as equivalent to the same grades in courses given in term-time.

By vote of the Faculty of Arts and Sciences, December 21, 1915, it was established:

"That undergraduate candidates for a degree with distinction who have the privileges of the Dean's list be permitted to count towards the degree of A.B. or S.B. two summer courses taken in Cambridge in the same summer."

Other undergraduates in Harvard College are not permitted in any one summer to count more than one of the summer courses given in Cambridge, obtaining credit for it as a "half-course."

Undergraduates wishing to take a summer course for the purpose of making up a failure in college will be admitted to the following courses *only*: —

Chemistry S1 (Elementary Theoretical and Descriptive Chemistry).

French S4 (Second-year College French).

German S4 (Second-year College German).

Mathematics SK (Trigonometry).

Engineering courses given at the Engineering Camp.

Undergraduates from other colleges taking summer work in order to make up a deficiency will be admitted to other courses than the above-mentioned only by special permission from Dr. WEBSTER.

## MEDICAL SCHOOL

Advanced instruction in Biological Science is offered during the summer in a series of courses in the laboratories of the Harvard Medical School in Boston. These courses are in the fields of Human Anatomy, Bacteriology, Biological Chemistry, Embryology, Histology, Neurology, Pathology and Physiology. They are specially designed to afford opportunity for teachers of Biology in colleges, normal schools, and the more advanced secondary schools to keep pace with the rapid advance of knowledge in these branches, with the aid of the rich collections and complete equipment of the Harvard Medical School, and under the supervision of specialists in the several fields.

## SOCIAL LIFE AND RECREATION

On Friday evening, July 14, there will be a reception at the Harvard Union to all members of the Summer School.

On Tuesday evening, August 15, the annual Gymnastic Exhibition by the students in the courses in Physical Education will be held in the Hemenway Gymnasium.

Phillips Brooks House, with parlors and a writing-room, will be open for social purposes, and various social gatherings are held there during the session of the School. On certain evenings during the session the men of the Summer School are invited to meet informally at the Harvard Union. The University tennis courts are kept in

order through the summer, and at one of the University boat-houses boats for rowing on the Charles River can be hired by members of the Summer School. The electric car lines radiating from Boston and Cambridge, and the steamboats of Boston Harbor, offer abundant opportunities for afternoon and Saturday excursions to parks, hills, woods, lakes, and the beaches and rocks of the neighboring seashore. Sea-bathing can be had at many points within easy reach. Private swimming lessons from competent instructors at the pool of the Sargent Gymnasium and of the Cambridge Y. M. C. A. can be arranged for a small fee.

### CHAPEL AND CHOIR

Morning Prayers, conducted by representatives of various denominations, are held daily at 8.45 A.M. in Appleton Chapel. For these services a choir will if possible be organized from among the students.

### MUSICAL ENTERTAINMENTS

A series of organ recitals will be given by the choir-master, assisted by various soloists. These organ recitals are given every Wednesday evening in the College Chapel, beginning at quarter-past seven and lasting a half-hour only, so as to enable students to attend the lectures, etc., which begin at eight o'clock.

Other musical entertainments will be furnished by Professor LEWIS and the Department of Music.

### ART MUSEUM VISITS

Five visits to the Boston Museum of Fine Arts, under the guidance of Museum Docents, will be provided for limited numbers without charge.

### HISTORICAL EXCURSIONS

Historical Excursions (carefully planned both for enjoyment and instruction) are arranged for Wednesday afternoons and Saturdays to the districts of greatest historical and literary interest in eastern Massachusetts. The Excursions usually include the following: —

Cambridge and Mt. Auburn  
Bunker Hill and Old Boston  
Lexington and Concord  
"Whittier Land" and Andover  
Plymouth  
Salem and Danvers



## OUTDOOR PLAYS

The CLIFFORD DEVEREUX PLAYERS will give four performances, either in the College Yard, or, in case of bad weather, in Sanders Theatre, as follows:—

<i>Monday</i> , August 7, 8.00 P.M.	<i>Wednesday</i> , August 9, { 2.30 P.M.
<i>Tuesday</i> , “ 8, 8.00 P.M.	{ 8.00 P.M.

The plays will include Shakespeare's *Twelfth Night*, *The Comedy of Errors*, the third act of *Julius Caesar*, Goldsmith's *She Stoops to Conquer*, and Sheridan's *The Critic*.

For *Summer Students* tickets to these plays will be sold at a lower rate than to the public at large.

## PUBLIC READINGS AND LECTURES

During the summer session Professor COPELAND will give a course of evening Lectures and Readings in English and American Literature in the New Lecture Hall.

Professor HUGO MÜNSTERBERG will give a series of public lectures on Applied Psychology.

Evening Readings from English Literature, intended especially for students in Public Speaking but open to all Summer Students, will be given by Professor WINTER.

There will also be single lectures on various subjects of general interest by professors on the regular University staff and others.

## STATISTICS

The total enrolment of the Summer School in 1915 was 916 persons, of whom 48 per cent were men and 52 per cent women. 65 per cent of the students enrolled in general courses were teachers and school officers. The residence of the students enrolled in general courses was as follows:—

New England States . . . . .	367
Middle States . . . . .	95
Southern States . . . . .	18
North Central States . . . . .	54
Western States . . . . .	4
Foreign Countries . . . . .	22

Further information and advice will be gladly furnished on application to the SECRETARY OF THE SUMMER SCHOOL,

19 University Hall,

Cambridge, Mass.

## LIST OF COURSES

### ARCHITECTURE

- S4a. Elements of Architectural Form. The Orders. Elementary Architectural Design. Problems, conferences, and criticism. *Daily, 9-5; Saturdays, 9-1.* Asst. Professor JOHN S. HUMPHREYS and Mr. WILLIAM G. PERRY.
- S4b. Architectural Design. (Intermediate Course.) Problems, conferences, and criticism. *Daily, 9-5; Saturdays, 9-1.* Asst. Professor JOHN S. HUMPHREYS and Mr. WILLIAM G. PERRY.
- S4c. Architectural Design. (Advanced Course.) Problems, conferences, and criticisms. *Daily, 9-5; Saturdays, 9-1.* Asst. Professor JOHN S. HUMPHREYS and Mr. WILLIAM G. PERRY.

These courses will be given only in case five or more students enroll in the course. Only one of them may be taken by any one student in a single summer. They are open to men only.

Thesis. — Students registered in the School of Architecture, who have by vote of the Council been admitted to candidacy for the degree of Master in Architecture, will have opportunity of carrying on their work on the thesis design to be submitted for the degree. Asst. Professor JOHN S. HUMPHREYS, Mr. WILLIAM G. PERRY, and Associate Professor CHARLES W. KILLAM.

The summer courses in Architecture begin on Monday, July 3, and last until Saturday, August 12, — a period of six weeks. The fee for each course is \$35 — with a registration fee of \$5 in the case of those members of the course who are not registered in the University.

### CHEMISTRY

- S1. Elementary Theoretical and Descriptive Chemistry. — Lectures and laboratory work. *Five times a week, at 9.* Asst. Professor ARTHUR B. LAMB. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$7.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B. It is accepted in fulfilment of the entrance requirement in Chemistry

\* If (as is usually the case) the actual breakage comes to less than the sum deposited, any balance remaining at the end of the session will be returned to the student; if the deposit is insufficient, an additional charge will be made.

for Harvard or Radcliffe College, and is also adapted to meet the requirement for admission to the Harvard Medical School. Students in Harvard College who have passed Chemistry S1 are admitted to Chemistry B. If Chemistry S1 is counted for a degree, Chemistry A may be counted as a half-course only.

- S2. Organic Chemistry. — Lectures and laboratory work. *Five times a week, at 11.* Dr. ROGER ADAMS. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry A or 1a or B or an equivalent. For students in Harvard College it cannot be counted in addition to Chemistry 2.

- S3. Qualitative Analysis. — Lectures and laboratory work. *Five times a week, at 9.* Asst. Professor GEORGE S. FORBES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$7.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry A or 1a or B or an equivalent. For students in Harvard College it may be substituted for the first half of Chemistry 3; and if Chemistry S3 is counted for a degree, Chemistry 3 will count as a half-course only.

- S4. Quantitative Analysis. — Laboratory work. *Five times a week, at 9.* Professor GREGORY P. BAXTER. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B. It is not, however, the equivalent of either half of Chemistry 4, and will not be accepted in Harvard or Radcliffe College as sufficient preparation for more advanced work in Chemistry, but properly qualified students will be given the opportunity to perform the laboratory work of either the first or second half-year of Chemistry 4. In this case, students in Harvard College can count Chemistry 4 in addition to Chemistry S4 as a half-course only.

- S6. Physical Chemistry. — Lectures and laboratory work. *Five times a week, at 11.* Dr. GRINNELL JONES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B. Students in Harvard College who satisfactorily complete this course will be admitted to Chemistry 6 without having taken Chemistry 8, and may also omit the laboratory work in Chemistry 6. Chemistry 6 taken in this way will count as a half-course only.

\* See note, page 24.

## COURSES FOR ADVANCED STUDENTS

Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50

S20e. Research in Inorganic and Physical Chemistry. Asst. Professor ARTHUR B. LAMB.

S20f. Research in Inorganic and Physical Chemistry. Professor GREGORY P. BAXTER.

S20h. Research in Physical Chemistry. Asst. Professor GEORGE S. FORBES.

S20i. Research in Physical Chemistry. Dr. GRINNELL JONES.

S20l. Research in Organic Chemistry. Dr. ROGER ADAMS.

Properly qualified students will be given the opportunity to perform the laboratory work in Chemistry 9, Chemistry 10, Chemistry 13, and Chemistry 22, during the summer session.

## ECONOMICS

S1. Principles of Economics. *Five times a week, at 9.* Mr. PHILIP G. WRIGHT. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

S2. Economic History of Europe and the United States during the Nineteenth Century. *Five times a week, at 10.* Professor EDWIN F. GAY. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Economics 2.

NOTE: For a course in Sociology, see *Sociology*.

## EDUCATION

SA. Psychological Principles of Education. — Survey of psychological problems in education; critical examination of contemporary doctrines; discussion of guiding principles in teaching and discipline. Lectures, reading, reports, conferences, and an essay. *Five times a week, at 9.* Asst. Professor EDWARD H. CAMERON, Yale University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 7.

- S3a. Organization and Administration of Schools and School Systems. — Programmes of study; duties and opportunities of superintendents and principals. Lectures, reports, and discussions. *Five times a week, at 9.* Dr. FRANK W. BALLOU, Director of Investigations, School Department, Boston, Mass. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3a.

- S3b. Principles of Secondary Education. — A consideration of the factors underlying the theory and practice of secondary education. *Five times a week, at 10.* Asst. Professor ALEXANDER J. INGLIS. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3b.

- S3c. Psychology of the Common School Subjects. — Methods and results of recent studies in the psychology and pedagogy of reading, writing, arithmetic, drawing, history, and geography. *Five times a week, at 11.* Asst. Professor EDWARD H. CAMERON, Yale University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3c.

- S4. Educational Measurement. — The methods and results of statistical and experimental studies in education. Standards and texts, especially in elementary school subjects. *Five times a week, at 11.* Dr. FRANK W. BALLOU, Director of Investigations, School Department, Boston, Mass. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 4.

- S8. Vocational Education. — Practice and principles. Lectures, reading, discussions, visits to schools, etc. *Five times a week, at 11.* Mr. CHARLES R. ALLEN, Agent for Industrial Education, Massachusetts Board of Education. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.



- S12. **Play in Education.** — The place and value of play as a means of education; conduct and administration of play in schools and school systems; social aspects of play and recreation. *Five times a week, at 9.* Mr. GEORGE E. JOHNSON, Instructor in Education, Harvard University, formerly Director of Playgrounds, Pittsburgh, Pa. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S14. **Child Development.** — Stages and characteristics in the mental and physical growth of children; the methods and results of child study and their bearing on teaching, the school programme, and home training. *Five times a week, at 11.* Mr. GEORGE E. JOHNSON, Instructor in Education, Harvard University, formerly Director of Playgrounds, Pittsburgh, Pa. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 14.

- S15. **The Junior or Intermediate High School and Related Movements.** — Plans for the reorganization of secondary education. Lectures, reading, discussion, and reports. *Five times a week, at 9.* Asst. Professor ALEXANDER J. INGLIS. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 15.

- S16. **The Principles of Vocational Guidance.** — Survey of the movement for vocational guidance and discussion of problems. Methods of counselling; coöperation of school, industry, and commerce; vocational problems in the school programme; educational problems of employment. *Five times a week, at 9.* Mr. JOHN M. BREWER, Fellow for Research in Vocational Guidance, Harvard University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 16 or 17.

- S17. **The Teaching of English in Secondary Schools.** — The materials, methods, and equipment of a teacher of English in high schools and preparatory schools. *Five times a week, at 11.* Mr. CHARLES S. THOMAS, Newton High School, Massachusetts. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

S20c. The Psychology of Mentally Deficient, Retarded, and Exceptional Children. — Lectures, clinics, exercises in mental testing and diagnosis, and observation of school and institutional cases and of the methods of training. *First three weeks, mornings, 9 to 12, with laboratory exercises in sections; second three weeks, afternoons, 2 to 5, with morning hours for class and individual work as may be arranged.* Asst. Professor WALTER F. DEARBORN, with the coöperation of Dr. WALTER E. FERNALD, Superintendent of the Massachusetts School for the Feeble-minded at Waverley. Tuition fee, \$35.

The work of the course will demand practically the entire time of the members of the class; although, subject to the approval of the instructors in charge, attendance at the lectures of another course may be undertaken.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 20c.

The number of students in the course will be limited. Persons desiring to enter are advised to make early application. A blank will be furnished upon application to the Secretary of the Summer School.

## ENGINEERING SCIENCES — SURVEYING

The following courses will be given at the Harvard Engineering Camp, Squam Lake, N. H. Men only will be admitted.

For men who have *not* paid a full year's tuition in Harvard College the fees for 1916 will be as follows: —

For Engineering Sciences 4a .....	\$75
“ “ “ 4d .....	92
“ “ “ 4a and first half of 4d .....	121

The fee covers board, lodging in a tent, laboratory charges (but not break-ages), and tuition.

\*ENGINEERING SCIENCES 4a hf. Surveying. — Use of instruments; plane and topographical surveying; levelling; map drawing and field practice. *Five weeks, beginning Saturday, June 24.* Professor H. J. HUGHES, and assistants.

Open to students who have studied plane trigonometry.

See note after Course 4d.

\*ENGINEERING SCIENCES 4d. Railroad Surveying. — Railroad curves and location; field and office practice. *Six weeks, beginning at the close of Course 4a.* Professor H. J. HUGHES, and assistants.

Open to students who have passed satisfactorily in Course 4a or its equivalent.

\* NOTE ON COURSES 4A AND 4D. — Course 4a and the first three weeks of Course 4d, if both are taken in the same summer, may be counted as one course toward the degree of A.B., A.A., and S.B.; Course 4a taken alone counts as one half-course toward A.B., A.A., and S.B.; Course 4d taken alone counts as one full course toward A.B., A.A., and S.B.

*For further information address Professor H. J. Hughes, 114 Pierce Hall, Cambridge, Massachusetts.*

For a course in Municipal Sanitation, see *Government*.

## ENGLISH

SA. English Composition and Methods of Teaching. — Lectures, recitations, written exercises, and conferences. *Five times a week, at 9.* Professor H. ROBINSON SHIPHERD, Pennsylvania College. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. and S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (History and Development of English Literature) is offered as the equivalent of the other half. Neither English SA nor English S28 may be counted for a degree in addition to English A.

SC. English Composition (advanced course). — Lectures, short themes, longer themes, and conferences. *Five times a week, at 9.* Mr. ROY FOLLETT, Brown University. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. and S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (History and Development of English Literature) is offered as the equivalent of the other half. Neither English SC nor English S28 may be counted for a degree in addition to English A.

- S67. English Composition. — Practice in writing, in the criticism of manuscript, and in instruction by conferences and lectures. Discussion of the principles of composition and of the organization and management of courses in English Composition. *Five times a week, at 11.* PROFESSOR CHESTER N. GREENOUGH. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to English 67.

- S3. Anglo-Saxon. *Five times a week, at 10.* DR. KENNETH G. T. WEBSTER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to English 3a.

- S7. English Literature in the Eighteenth Century. *Five times a week, at 11.* ASST. PROFESSOR CHARLES T. COPELAND, assisted by Mr. T. L. HOOD. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S33. American Literature. — Lectures, reading, and reports. *Five times a week, at 9.* PROFESSOR CHESTER N. GREENOUGH. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

For a course on The Teaching of English in Secondary Schools, see *Education*.

## DRAMA

- S1. Fundamentals of Drama. — Lectures and discussions. *Five times a week, at 9.* PROFESSOR GEORGE P. BAKER, assisted by Mr. P. F. RENIERS. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S2 (double course). Stage Management. *Five hours a week in the classroom, lectures and discussions, at 10;* also at least two hours a day of attendance at rehearsals. PROFESSOR GEORGE P. BAKER, assisted by Mr. P. F. RENIERS. Tuition fee, \$30.

This course is accepted as a half-course for the degree of A.A.

- S3. Theatrical Design. — The general principles of Design with special study of their application to problems offered by the stage. *Five times a week, at 9.* MR. MARTIN MOWER. Tuition fee, \$20 (not including materials).

This course is accepted as a half-course for the degree of A.A.

## FINE ARTS

- S1d. History of Mediaeval, Renaissance, and Modern Art. Lectures, study of works of art, and prescribed reading. *Five times a week, at 10.* Asst. Professor GEORGE H. EDGELL. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Fine Arts 1d.

- S1. The Theory of Pure Design. *Five times a week, at 9.* Mr. HENRY H. CLARK, Museum School of Fine Arts, Boston. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S2. Advanced Practice in Pure Design with lectures on the Application of Design in Different Arts. *Five times a week, at 10.* Mr. HENRY H. CLARK, Museum School of Fine Arts, Boston, assisted by Mr. E. O. PARKER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

## FRENCH

- S4. Elementary French. — Reading, grammar, and composition. *Five times a week, at 9.* Mr. GEORGE B. WESTON. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S1. French for Teachers. — Reading and composition. *Five times a week, at 11.* Mr. GEORGE L. LINCOLN. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 2.

- S2. French Conversation. *Five times a week, at 9.* Mr. EUGÈNE L. RAICHE. Tuition fee, \$20; if taken in addition to another course in French, the fee is \$10.

This course does not count toward any degree.

- S4. Second-year College French. — Reading, grammar, and composition. *Five times a week, at 9.* Asst. Professor ARTHUR F. WHITEM. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 1.



- S3. Studies in French Literature of the Nineteenth Century. *Five times a week, at 10.* Mr. EUGÈNE L. RAICHE. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 7.

## GEOLOGY

Correspondence concerning the summer courses in Geology should be addressed to the instructors in charge, not later than June 1, 1916. These courses are open to men only. Information about fees and expenses will be furnished on request.

- S6. Field Geology. — Field course in the San Juan Mountains of southwestern Colorado, with regular field instruction. *Six days a week, for eight weeks, beginning early in July.* Professor WALLACE W. ATWOOD and Dr. WINTHROP P. HAYNES.

Geography 1 or Geology 4, or an equivalent training, is required for admission to this course. Fee, \$30. Geology S6, when completed with a satisfactory written report, is accepted as a full course for A.B., A.A., and S.B.

### *Courses Primarily for Graduate Students*

- S20a. Physiographic Field Studies. *Six days a week, for five weeks or ten weeks.* Professor WALLACE W. ATWOOD.
- S20c. Section A. Geological and Petrographical Field Studies. *Six days a week, for five weeks or ten weeks.* Professor JOHN E. WOLFF.
- S20c. Section B. Structural or Glacial Field Work. *Six days a week, for five weeks or ten weeks.* Associate Professor J. B. WOODWORTH.

## GERMAN

- SA. Elementary German. — Reading, grammar, and composition. *Five times a week, at 11.* Dr. ASBURY H. HERRICK. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S1. German for Teachers. — Reading, grammar, composition, and methods of teaching. *Five times a week, at 9.* Dr. ASBURY H. HERRICK. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S2. German Conversation. *Five times a week, at 9.* Dr. FRIEDRICH SCHOENEMANN. Tuition fee, \$20; but if taken with one of the other courses in German, the fee is \$30 for the two courses.

This course does not count toward any degree. It will be given only in case ten persons apply.

- S3. German Literature of the Nineteenth Century. *Five times a week, at 10.* Dr. FRIEDRICH SCHOENEMANN. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to both German 26a and 26b.

- S4. Second-year College German. — German prose and poetry; grammar and practice in writing German. *Five times a week, at 9.* Dr. FREDERICK W. C. LIEDER. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted by students in Harvard College who have passed any elective course in German, or who have passed in Advanced German for admission to College.

## GOVERNMENT

- S1. Principles of Government, especially American Government. — Lectures, parallel reading, and written exercises. *Five times a week, at 9.* Asst. Professor ARTHUR N. HOLCOMBE. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 1.

- S4. Elements of International Law and Modern International Questions. — Lectures, parallel reading, and written reports. *Five times a week, at 9.* Professors GEORGE H. BLAKESLEE, Clark University, and GEORGE G. WILSON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 4.

For a course on International Politics by Professors ARCHIBALD C. COOLIDGE and GEORGE G. WILSON, see *History S70*.

- S31. Municipal Sanitation. — Public Health and Safety from an administrative point of view. *Five times a week, at 12.* Professor GEORGE C. WHIPPLE. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 31.

## HISTORY

- S1. European History. — Mediaeval and Modern. Lectures and reports. *Five times a week, at 9.* Professors CHARLES H. HASKINS and EDWIN F. GAY. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 1.

- S4. History of England. — Lectures, discussions, and written reports. *Five times a week, at 10.* Professors CHARLES H. HASKINS and WILLIAM MACDONALD, Brown University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 9, 11, or 12.

- S5. American Politics in the Nineteenth Century. — Lectures, reading, discussions, and written reports. *Five times a week, at 11.* Professor WILLIAM MACDONALD, Brown University.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S25. Historical Bibliography. — *Two hours weekly; Monday, 3.30-5.30.* Professor CHARLES H. HASKINS.

This course is designed particularly for graduates. Others possessing sufficient preparation may be admitted by the instructor.

Tuition fee, \$10.

- S56 (double course). History of Latin Civilization in America. — Lectures, reading, discussions, and reports. *Five times a week, 9-11.* Mr. CLARENCE H. HARING and Dr. JULIUS KLEIN. Tuition fee, \$30.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 56.

- S70. Factors and Problems in International Politics. — Lectures, parallel reading, and written reports. *Five times a week, at 11.* Professors ARCHIBALD C. COOLIDGE and GEORGE G. WILSON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

For a course on Elements of International Law and Modern International Questions, see *Government S4*.

## ITALIAN

- S1. Elementary Italian. — Reading, grammar, and composition. *Five times a week, at 11.* Mr. GEORGE B. WESTON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Italian 1.

- S2. Advanced Italian. — Composition, conversation, and reading. *At hours to be arranged by the instructor.* Mr. GEORGE B. WESTON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Italian 1.

## LATIN

- S10. A Survey of Roman Civilization. — Lectures (illustrated with stereopticon views), prescribed reading, and reports. *Five times a week, at 10.* Professor CHARLES N. SMILEY, Grinnell College. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Latin 10.

## MATHEMATICS

- SK. Logarithms and Trigonometry. — Lectures and problems. *Five times a week, at 9.* Mr. HARRY D. GAYLORD. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted by students in Harvard College in addition to Mathematics *A*, *B*, or *K*, or by students who have counted Trigonometry for admission.

- SC. Plane Analytic Geometry. *Five times a week, at 10.* Asst. Professor GEORGE D. BIRKHOFF. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Mathematics *A*, *B*, *C*, *F*, or *L*.

- S2. Calculus. — Lectures and problems. *Five times a week, at 11.* Professor WILLIAM F. OSGOOD. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For a student who passes satisfactorily a higher course in Harvard College it may be counted toward the A.B. or S.B. degree.

## MEDICAL SCIENCES

## COURSES AT THE HARVARD MEDICAL SCHOOL

*Given by the Graduate School of Medicine*

## ANATOMY

- S101. Human Anatomy. — Dissection course. Laboratory dissection by the student under general supervision of the instructor. There is an artificially cooled dissecting room especially for summer work. *July 1-31, mornings, afternoons, or all day.* Repeated in August. Women are not admitted to this course. Fee, \$30 for each part, and an additional fee of \$5 for each part for material. Associate Professor JOHN WARREN and Asst. Professor DAVID CHEEVER, and Drs. ROBERT M. GREEN and WALTER M. BOOTHBY.
- S110. Topographical Anatomy. — Laboratory work under supervision of instructor. Study of frozen sections and special preparation. *June, mornings or afternoons.* Repeated in July. Women are not admitted. Fee, \$50. Additional charge of \$1.50 for drawing material. Associate Professor JOHN WARREN and Dr. ALEXANDER S. BEGG.
- S120. Anatomy of the Central Nervous System and Special Sense Organs. — Laboratory course. *June, daily, 9 to 1.* Repeated in July and August. Women are admitted. Fee, \$35. Extra charge for microscope. Dr. ALEXANDER S. BEGG.

## BACTERIOLOGY

- S156. Elementary Bacteriology. — Laboratory work under the supervision of the instructor. *July 1-31, 3.30 to 6 P.M.* Repeated in August. Women are admitted. Fee, \$35, with an extra charge of \$5 for materials. Microscopes may be rented from the Harvard Medical School. By MEMBERS OF THE DEPARTMENT.

## BIOLOGICAL CHEMISTRY

- S146. Biological Chemistry. — Laboratory practice and discussions. Students may begin this course *June 1 to June 21, and continue for six weeks, 9 to 1, and 2 to 5, daily.* Women are admitted. Fee, \$60. Professor OTTO FOLIN and Asst. Professor WALTER R. BLOOR.
- S147. Biological Chemistry. — Advanced course. Individual work. *July 1 to 31.* Women are admitted. Fee, \$60 for all day; \$40 for a half-day. Professor OTTO FOLIN and Asst. Professor WALTER R. BLOOR.



## EMBRYOLOGY

- S118. Embryology. — Elementary course. Essentially a study of mammalian embryology in the form presented to medical students during their first year. Laboratory exercises. *June, daily, 9 to 1.* Repeated in July and August. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.
- S122. Embryology. — Advanced course. Laboratory exercises. *June to September.* Registration fee, \$5. Additional fees for instruction and material will be arranged after conference with the instructor. Associate Professor FREDERIC T. LEWIS.

## HISTOLOGY

- S117. Histology. — Elementary course. This course deals with the microscopic structure of human tissues and organs, and is essentially identical with the course in this subject required of first-year medical students. Laboratory exercises. *June, daily, 9 to 1.* Repeated in July and August. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.
- S121. Histology. — Advanced course. Laboratory exercises. *June to September.* Registration fee, \$5. Additional fees for instruction and material will be arranged after conference with the instructor. Associate Professor JOHN L. BREMER.

## MICROSCOPICAL TECHNIQUE

- S115. Microscopical Technique and Laboratory Methods. — Special course, dealing with the ordinary and special methods of fixing, imbedding, cutting, and staining, reconstruction and other means of research. *June, daily, 9 to 1.* Repeated in July and August. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.

## PATHOLOGY

- S176. General and Special Pathology. — Lectures and laboratory work. *July 24 to September 1, 2 to 5 P.M., daily, except Saturday.* Women are admitted. Fee, \$50. A deposit of \$10 will be required for material. Extra charge for microscope. Dr. JAMES E. ASH.

## PHYSIOLOGY

- S133. Practical Physiology. — Lectures, laboratory, and demonstrations. This course is adapted for well prepared teachers in high schools, normal schools, and colleges. *July 1-31, daily, 9 to 1, and, except Saturdays, 3 to 5.* Women are admitted. Fee, \$40; for the morning course, \$30; for the afternoon course, \$25.

There is an extra charge of \$5 for laboratory material in each of these courses. For the lecture and demonstration course without laboratory work, the fee is \$20. Dr. PERCY G. STILES and assistants.

## MUSIC

- S1. Musical Appreciation, elementary. — Systematic studies in musical essentials from the listener's standpoint. *Five times a week, at 9.* Professor LEO R. LEWIS, Tufts College. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Music 4.

- S10. The Analysis of Representative Classics and Modern Compositions. Professor LEO R. LEWIS, Tufts College. *Five times a week, at 11.* Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Music 4.

## PHILOSOPHY

- S1. William James and Henri Bergson. — A comparative study of two of the foremost modern thinkers. *Five times a week, at 12.* Asst. Professor R. F. ALFRED HOERNLÉ. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Philosophy 18a.

- S20. Advanced Study of Philosophical Problems. — A research course in Philosophy, conducted by means of conferences *at hours to be arranged with the instructor.* Asst. Professor R. F. ALFRED HOERNLÉ. Tuition fee, \$20.

NOTE: In case Professor Hoernlé is obliged to be absent from the Summer School, Philosophy S1 will be given by Dr. Horace M. Kallen

of the University of Wisconsin; and in place of S20, Dr. Kallen will give a course in the Philosophy of Art, — Philosophy S70.

## PSYCHOLOGY

For courses in Psychology, see *Education SA*, *Education S3c*, and *Education S20c*.

## PHYSICAL EDUCATION

Courses in Theory. — Graded series, covering four years and including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, Methods and Practice of Teaching, etc. Dr. DUDLEY A. SARGENT, *Director*. Fee, \$25.

Courses in Practice. — Graded series, covering four years and including Swedish and German Floor Work, Gymnastic Games, Field and Track Athletics, Aesthetic and Folk Dancing, Corrective Gymnastics, Playground Work, etc. Dr. DUDLEY A. SARGENT, *Director*. Thirty instructors and ten assistants. Fee, \$25.

*A special circular containing full particulars will be sent on application to the Director, Dr. Dudley A. Sargent, Harvard University, Cambridge, Mass.*

## PHYSICS

- S1. General Physics. — Modern developments of the science. Lectures, demonstrations, and laboratory work. *Two lectures, daily, at 9 and 2.* Mr. RHYS D. EVANS, Bowdoin College. Tuition fee, \$30.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Physics B, nor to remove an entrance condition in Elementary Science. This course covers the requirement in Physics for entrance to the Harvard Medical School.

## PUBLIC SPEAKING AND ORAL ENGLISH

- S6. Fundamentals of Public Speaking and Oral English. — Cultivation of voice, and training in the main principles of effective speaking and reading. Associate Professor JOHN CORSA, Amherst College.
- S10. Public Speaking. — Practice in the effective platform delivery of various forms of public address; the preparation and delivery of original speeches, mostly by the extemporaneous method. Associate Professor IRVAH L. WINTER, Harvard University, and Asst. Professor BENJAMIN C. VAN WYE, University of Cincinnati.

- S15. Oral Reading. — Studies in the interpretation, and practice in the oral reading, of texts used in the preparatory and early college English Literature. Intended especially for teachers of English. Asst. Professor BENJAMIN C. VAN WYE, University of Cincinnati.
- S17. Oral Composition. — Training in the various forms of English composition by the method of oral practice. Intended especially for teachers of English. Professor H. ROBINSON SHIPHERD, Pennsylvania College.
- S21. Dramatic Interpretation. — Studies in the modern play, with oral practice in characterization, for the purpose of platform reading or of stage presentation. For teachers of English and students of dramatic literature, and for public readers. Associate Professor THOMAS CROSBY, Jr., Brown University.

#### SPECIAL COURSES FOR TEACHERS OF PUBLIC SPEAKING

- S7. Vocal Technique, Advanced Course. — Voice Development; the correction of vocal faults; the scientific consideration of voice in its physical aspects. Lectures, demonstrations, and individual training. Associate Professor IRVAH L. WINTER, Harvard University; Associate Professor GEORGE McF. McKIE, University of North Carolina; Dr. SMILEY BLANTON, University of Wisconsin.
- S8. Advanced Course in Interpretation. — Dramatic Literature, including Shakespeare; narrative prose and verse and lyric poetry. Class discussions, and individual training. Associate Professor IRVAH L. WINTER, Harvard University, and Associate Professor GEORGE McF. McKIE, University of North Carolina.
- S27. Principles and Methods in Teaching. — Examination and criticism of various text-books; problems in the psychology and pedagogy of speaking and reading; the teaching of the special subject of debating. Lectures, reports, and conferences. Associate Professor IRVAH L. WINTER, Harvard University; Mr. JOSEPH S. GAYLORD, State Normal School, Winona, Minnesota; Mr. ARTHUR P. STONE, Harvard University.

Any two of the courses in Oral English or Public Speaking may together be counted as a half-course for A.B., A.A., and S.B., provided no course in Public Speaking in Harvard College has been so counted. For students in Harvard College, summer courses in Public Speaking cannot be counted in addition to any courses given in regular term-time.

*For the general fee of \$30, a qualified student may take any two of these courses. For the fee of \$35, three courses may be taken.*

*The fee for a single course is \$20. But a student who is taking another field of study may, with the consent of the instructors concerned, take one of these courses in Oral English or Public Speaking for a fee of \$10.*

## SOCIAL ETHICS

- S1. Contemporary Social Problems. — Their settlement through philanthropic coöperative and governmental agencies. Lectures, reading, excursions, and reports. *Five times a week, at 9.* Professor JAMES FORD. Tuition fee, \$20 (not including excursions).

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Social Ethics 1.

- S20. Social Research. — Practice in General Social Service and Housing Conditions. *At hours to be arranged with the instructor.* Professor JAMES FORD. Tuition fee, \$20.

## SOCIOLOGY

- S1. Sociology and Contemporary Social Problems. *Five times a week, at 10.* Mr. PHILIP G. WRIGHT. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

## SPANISH

- S1. Elementary Spanish. — Reading, grammar, and composition. *Five times a week, at 9.* Mr. GEORGE L. LINCOLN. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Spanish 1.

- S2. Spanish Composition and Conversation. *Five times a week, at 11.* Asst. Professor ARTHUR F. WHITEM. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Spanish 7.







## OFFICIAL REGISTER OF HARVARD UNIVERSITY

*[Entered March 6, 1913, at Boston, Mass., as second-class matter,  
under Act of Congress of August 24, 1912.]*

---

Issued at Cambridge Station, Boston, Mass., six times a year.

---

These publications include :—

The Annual Reports of the President and of the Treasurer.

The Annual University Catalogue.

The Annual Catalogues of the College and the several Professional Schools of the University; the Announcements of the several Departments; etc., etc.

## SUMMER SCHOOL OF ARTS AND SCIENCES

Fuller descriptions of the courses in the several departments will be sent on application.

The Director will be grateful to any one who will send him the addresses of teachers and others who might like to receive information about the Summer Courses.

Address: Dr. K. G. T. Webster,  
19 University Hall,  
Cambridge, Mass.

---

To the Secretary of the Harvard Summer School of Arts and Sciences, 19 University Hall, Cambridge, Mass. : —

Please send me the full description of the courses in .....

.....

*Name,* .....

*Address,* .....

.....

.....

2  
26u2s  
1917

# OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOLUME XIV

MARCH 7, 1917

NO. 7

## ANNOUNCEMENT

OF THE

## SUMMER SCHOOL OF ARTS AND SCIENCES

JULY 2 — AUGUST 11, 1917

UNIVERSITY OF ILLINOIS LIBRARY



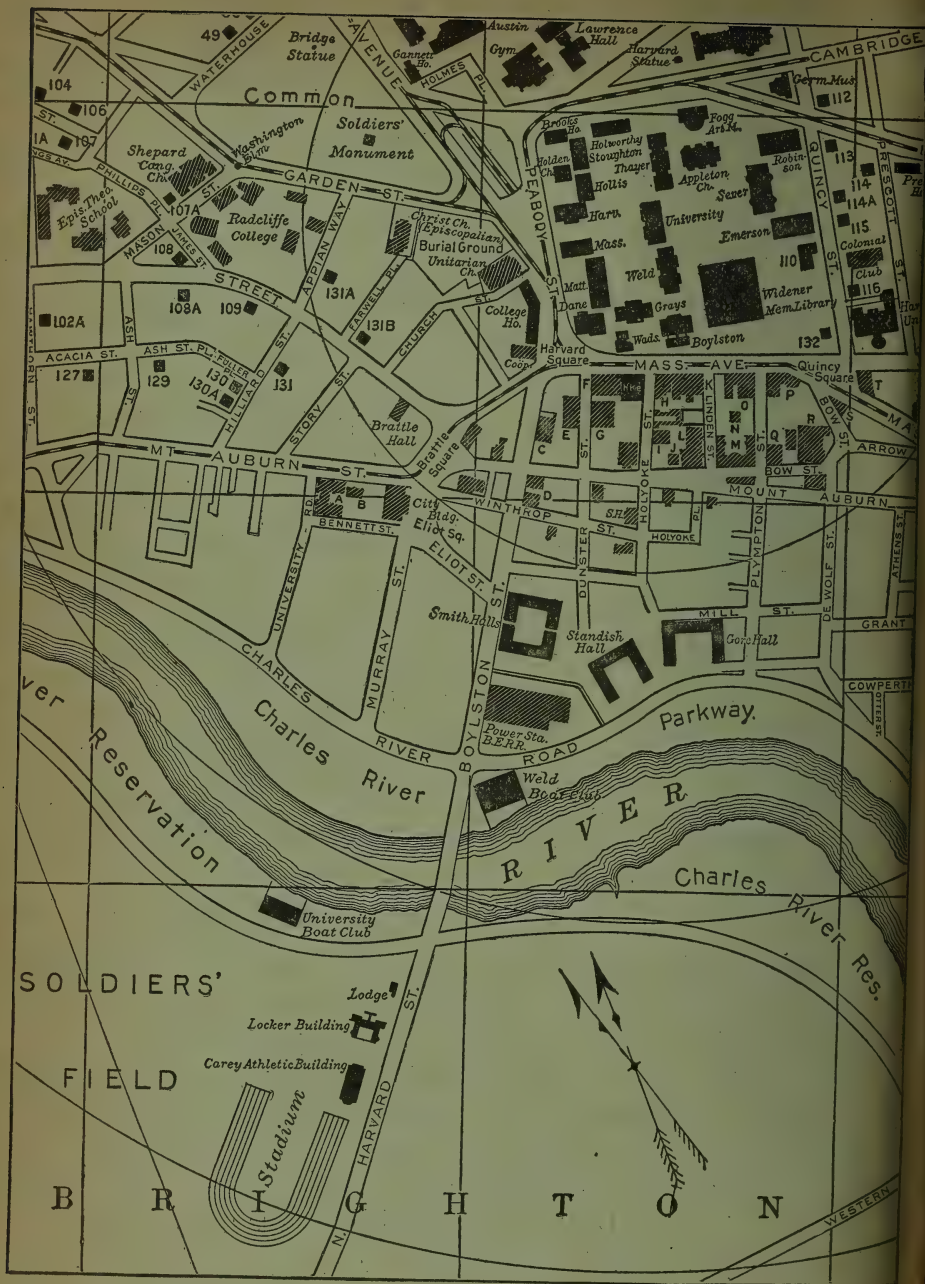
UNIVERSITY OF ILLINOIS

SEP 17 1917

Administrative Library

PUBLISHED BY HARVARD UNIVERSITY  
CAMBRIDGE, MASS.





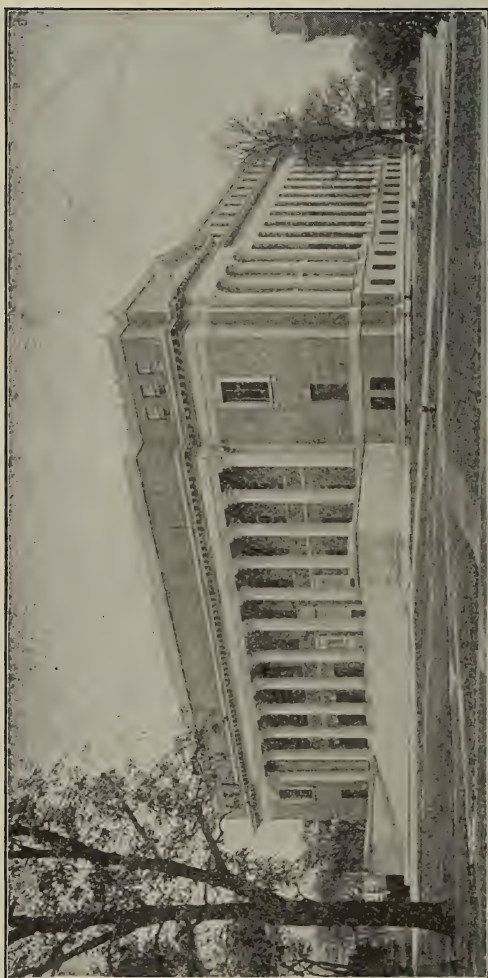
HARVARD SQUARE AND VICINITY

ANNOUNCEMENT  
OF THE  
SUMMER SCHOOL OF ARTS  
AND SCIENCES

JULY 2 — AUGUST 11, 1917



CAMBRIDGE  
PUBLISHED BY THE UNIVERSITY  
1917



THE WIDENER LIBRARY

# OFFICERS OF THE SUMMER SCHOOL OF ARTS AND SCIENCES

1917

---

## PRESIDENT

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., Ph.D.

## ADMINISTRATIVE BOARD

JAMES HARDY ROPES, A.B., D.D., *Hollis Professor of Divinity*, DEAN OF  
SPECIAL STUDENTS and DEAN IN CHARGE OF UNIVERSITY EXTENSION.

KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Assistant Professor of Eng-  
lish*, DIRECTOR OF THE SUMMER SCHOOL OF ARTS AND SCIENCES.

PAUL HENRY HANUS, S.B., LL.D., *Professor of the History and Art of  
Teaching*.

CLIFFORD HERSCHEL MOORE, Ph.D., Litt.D., *Professor of Latin*.

ERNEST CARROLL MOORE, LL.B., Ph.D., LL.D., *Professor of Education*.

GEORGE WASHINGTON PIERCE, S.B., Ph.D., *Assistant Professor of Physics*,  
and *Director of the Cruft Memorial Laboratory*.

HECTOR JAMES HUGHES, A.B., S.B., *Professor of Civil Engineering*, and  
*Director of the Engineering Camp*.

WILLIAM BENNETT MUNRO, LL.B., Ph.D., LL.D., *Professor of Municipal  
Government*.

ARTHUR FISHER WHITTEM, Ph.D., *Assistant Professor of Romance Languages*.

## SECRETARY

MARION CECILE WEBSTER, A.B.,

19 University Hall

## INSTRUCTORS

LOUIS ALLARD, AGRÉGÉ-DES-LETTRES, *Assistant Professor  
of French*, 1130 Mass. Ave.

BENJAMIN M ANDERSON, Jr., Ph.D., *Assistant Professor of  
Economics*, 102 Avon Hill St.

WALLACE WALTER ATWOOD, S.B., Ph.D., *Professor of Phys-  
iography*, 48 Lake View Ave.

GREGORY PAUL BAXTER, Ph.D., *Professor of Chemistry*,  
Coolidge Memorial Laboratory

- MAXIME BÔCHER, Ph.D., *Professor of Mathematics*, 48 Buckingham St.
- JOHN MARKS BREWER, S.B., Ph.D., *Instructor in Education*, 37 Concord Ave.
- CURTIS WORTH CHENOWETH, A.M., *Instructor in Public Speaking*, 260 Cambridge St.
- JAMES BRYANT CONANT, Ph.D., *Instructor in Chemistry*, Thayer 5
- ARCHIBALD CARY COOLIDGE, Ph.D., LL.D., *Professor of History, and Director of the University Library*, Randolph 4
- CHARLES TOWNSEND COPELAND, A.B., *Assistant Professor of English*, Hollis 15
- WALTER FENNO DEARBORN, Ph.D., M.D., *Assistant Professor of Education*, Walter Hastings 7
- GEORGE SHANNON FORBES, Ph.D., *Assistant Professor of Chemistry*, 2 Prescott St.
- JAMES FORD, Ph.D., *Assistant Professor of Social Ethics*, 35 Walker St.
- HENRY ATHERTON FROST, A.B., *Instructor in Architecture*, 16 Prentiss St.
- EDWIN FRANCIS GAY, Ph.D., *Professor of Economics, and Dean of the Graduate School of Business Administration*, 57 Francis Ave.
- CHESTER NOYES GREENOUGH, Ph.D., *Professor of English*, 26 Quincy St.
- ALFRED CHESTER HANFORD, A.M., *Instructor in Municipal Government, and Tutor in the Division of History, Government, and Economics*, Conant 36A
- CHARLES HOMER HASKINS, Ph.D., A.M., Litt.D., LL.D., *Gurney Professor of History and Political Science, and Dean of the Graduate School of Arts and Sciences*, 53 Francis Ave.
- ASBURY HAVEN HERRICK, Ph.D., *Instructor in German*, 34 Maple Ave.
- REINHOLD FRIEDRICH ALFRED HOERNLÉ, M.A., B.Sc., *Assistant Professor of Philosophy*, 2 Shady Hill Square
- ARTHUR NORMAN HOLCOMBE, Ph.D., *Assistant Professor of Government, and Tutor in the Division of History, Government, and Economics*, 21 Follen St.
- WILLIAM GUILD HOWARD, A.M., *Assistant Professor of German*, 39 Kirkland St.
- HECTOR JAMES HUGHES, A.B., S.B., *Professor of Civil Engineering, and Director of the Engineering Camp*, 6 Clement Circle
- JOHN SANFORD HUMPHREYS, *Associate Professor of Architectural Design*, 24 Avon St.
- ALEXANDER JAMES INGLIS, Ph.D., *Assistant Professor of Education*, 103 Avon Hill St.
- DUNHAM JACKSON, Ph.D., *Assistant Professor of Mathematics*, Conant 5
- GEORGE ELLSWORTH JOHNSON, A.M., *Assistant Professor of Education*, 14 Sacramento St.



- GRINNELL JONES, S.M., Ph.D., *Assistant Professor of Chemistry*, 11 Huron Ave.  
 CHARLES WILSON KILLAM, *Associate Professor of Architectural Construction*, 51 Avon Hill St.
- ARTHUR BECKET LAMB, Ph.D., *Assistant Professor of Chemistry, and Director of the Chemical Laboratory*, Standish E24
- HAROLD JOSEPH LASKI, *Instructor in History, and Tutor in the Division of History, Government, and Economics*, 1697 Cambridge St.
- FREDERICK WILLIAM CHARLES LIEDER, Ph.D., *Instructor in German*, Holyoke 6
- GEORGE LUTHER LINCOLN, A.M., *Instructor in Romance Languages*, 2000 Commonwealth Ave., Boston
- CLIFFORD HERSCHEL MOORE, Ph.D., Litt.D., *Professor of Latin*, 112 Brattle St.
- WILLIAM GRAVES PERRY, A.B., S.B., ARCHITECTE DIPLOMÉ PAR LE GOUVERNEMENT FRANÇAIS, *Instructor in Architectural Design*, 19 Congress St., Boston
- ARTHUR POPE, A.B., *Assistant Professor of Fine Arts*, 11 Lowell St.
- EUGÈNE LOUIS RAICHE, *Instructor in French*, 39 Linnaean St.
- MEYRIC REYNOLD ROGERS, A.B., *Assistant in Fine Arts*, Matthews 60
- DUDLEY ALLEN SARGENT, M.D., A.M., S.D., *Director of the Hemenway Gymnasium*, 27 Everett St.
- WALTER RAYMOND SPALDING, A.M., *Associate Professor of Music*, 5 Berkeley Place
- KENNETH GRANT TREMAYNE WEBSTER, Ph.D., *Assistant Professor of English, and Director of the Summer School of Arts and Sciences*, Gerry's Landing
- GEORGE BENSON WESTON, A.M., *Instructor in Romance Languages*, 21 Craigie St.
- ARTHUR FISHER WHITTEM, Ph.D., *Assistant Professor of Romance Languages, and Secretary of the Administrative Board for Special Students*, 9 Vincent St.
- GEORGE GRAFTON WILSON, Ph.D., LL.D., *Professor of International Law*, 6 Acacia St.
- IRVAH LESTER WINTER, A.B., *Associate Professor of Public Speaking*, Hubbard Park
- JOHN ELIOT WOLFF, Ph.D., *Professor of Petrography and Mineralogy, and Curator of the Mineralogical Museum*, 300 Hammond St., Chestnut Hill
- HARRY AUSTRYN WOLFSON, Ph.D., *Instructor in Jewish Literature and Philosophy*, Divinity 25
- JAY BACKUS WOODWORTH, S.B., *Associate Professor of Geology*, 44 Avon Hill St.

## VISITING INSTRUCTORS

- FRANK WASHINGTON BALLOU, Ph.D., *Director of Investigations, School Committee Rooms,* Boston
- PHILIP MARSHALL BROWN, A.M., *Professor of International Law, Princeton University,* Princeton, N. J.
- RHYS DAFYDD EVANS, A.B., *Assistant Professor of Physics, Bowdoin College,* Brunswick, Me.
- WALTER ELMORE FERNALD, M.D., A.M., *Superintendent of the Massachusetts School for the Feeble-Minded at Waverley,* Waverley
- ROY FOLLETT, A.B., *Instructor in English, Brown University,* Providence, R. I.
- JAMES HOLLY HANFORD, Ph.D., *Associate Professor of English, University of North Carolina,* Chapel Hill, N. C.
- CLARENCE KENNEDY, A.M., *Instructor in Art, Smith College,* Northampton
- CLARENCE DARWIN KINGSLEY, A.M., *Agent for High Schools, Massachusetts State Board of Education; Chairman, Commission on the Reorganization of Secondary Education of the National Education Association,* Boston
- LEO RICH LEWIS, A.M., *Professor of the History and Theory of Music, Tufts College,* Tufts College
- JOHN LIVINGSTON LOWES, Ph.D., *Professor of English, Washington University,* St. Louis, Mo.
- WILLIAM MACDONALD, Ph.D., LL.D., *George L. Littlefield Professor of American History, Brown University,* Providence, R. I.
- GEORGE MCFARLAND MCKIE, A.M., *Associate Professor of Public Speaking, University of North Carolina,* Chapel Hill, N. C.
- GEORGE ALONZO MIRICK, A.M., *formerly Assistant Commissioner of Education in charge of Elementary Schools for New Jersey,* 11 Walnut Ave., Cambridge
- EDWIN DuBOIS SHURTER, Ph.B., *Professor of Public Speaking, University of Texas,* Austin, Tex.
- WILLIAM BRACKETT SNOW, A.B., *Headmaster, English High School,* Boston
- CHARLES SWAIN THOMAS, *Head of the Department of English, Newton High School,* 283 Highland Ave., W. Newton
- BENJAMIN CARLTON VAN WYE, A.M., *Assistant Professor of Public Speaking and English, University of Cincinnati,* Cincinnati, O.
- CHARLES HENRY WOOLBERT, A.M., *formerly Associate in Public Speaking and English, University of Illinois,* 9 Center St., Cambridge

## ORGANIST AND CHOIR-MASTER

- ARTHUR MAIN PHELPS, 7 Melrose St., Arlington

# SUMMER SCHOOL OF ARTS AND SCIENCES

MONDAY, JULY 2, TO SATURDAY, AUGUST 11, 1917

---

## HARVARD UNIVERSITY

THE history and environment of Harvard University have been described as follows: —

“Harvard University, founded as a college in 1636, was for over half a century, until the founding in 1693 of the College of William and Mary in Virginia, the only college in the country. The name of the town where it was established was changed from Newtowne to Cambridge in honor of the English university where many of the leading colonists had been educated. Although only three miles inland on the banks of the Charles, Cambridge was at that time a frontier settlement, a fact of which there is still lingering evidence in the clumps of willows, sprouts from the old stockade against the Indians, standing in a part of the college grounds.

“The College is the centre of Old Cambridge. From it westward and northward run the three principal streets,

Cambridge, Brattle Street, past the houses of Longfellow and Lowell; Garden Street, past the elm under which Washington first reviewed the American army, and past the Observatory and the Botanic Garden; and Massachusetts Avenue, leading to Lexington and Concord, the road along which the British soldiers retreated after the first battle of the Revolution. Near where Garden Street and Massachusetts Avenue separate, on Holmes Place, stood the house in which were the headquarters of General Ward and

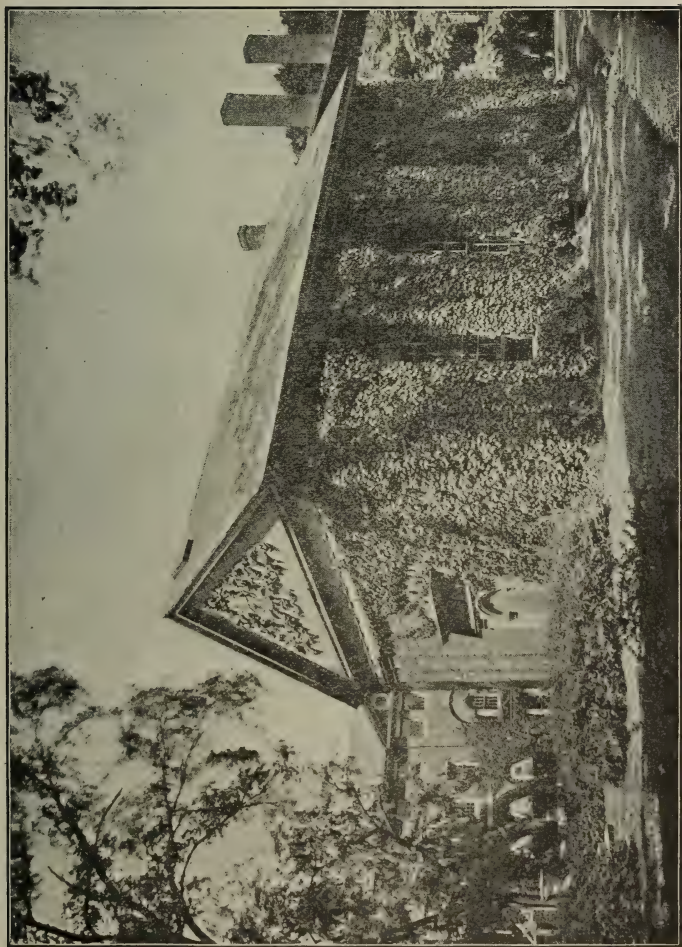
of the Committee of Public Safety in 1775, and in which Dr. Oliver Wendell Holmes was born. On the neighboring stretch of green, in front of the present Harvard Law School, Samuel Langdon, President of Harvard College, that 'hotbed of sedition,' offered prayer on the evening of June 16, 1775, for the Continental troops there assembled under Colonel Prescott and about to march to Bunker Hill. Across the street is a group of buildings, Massachusetts, Harvard, and Hollis Halls, and little Holden Chapel, which date back to prerevolutionary times. During one period of the Revolution the College was removed to Concord, and these buildings were used as quarters for the Continental Army.

"The Harvard Library, now in the new Harry Elkins Widener Memorial building, is in size at least the fourth, and possibly the third, library in the country, Libraries — the Library of Congress being first. It contains at present about 755,000 books and 437,000 pamphlets.

"Close at hand is the Boston Public Library, another of the greatest importance. Still other libraries, such as the Boston Athenaeum, the State Library, the library of the Massachusetts Historical Society, the library of the American Academy of Arts and Sciences, and the libraries of the Loyal Legion and the Massachusetts Military Historical Society, furnish re-enforcement in particular fields.

"The University derives many advantages from its nearness to Boston. The great collections of paintings, sculpture, and other objects in the Boston Museum of Fine Boston Arts offer unsurpassed opportunities of artistic education and enjoyment. Boston is an important musical centre, and is visited by many lecturers and men of note. A terminal centre for railroads and for steamship lines, it affords many and convenient means of communication with the immediate and more distant parts of the country. The highly developed park system of Boston and of the metropolitan district is one of the great charms of the region.





HOLDEN CHAPEL, 1744, AND PHILLIPS BROOKS HOUSE, 1899

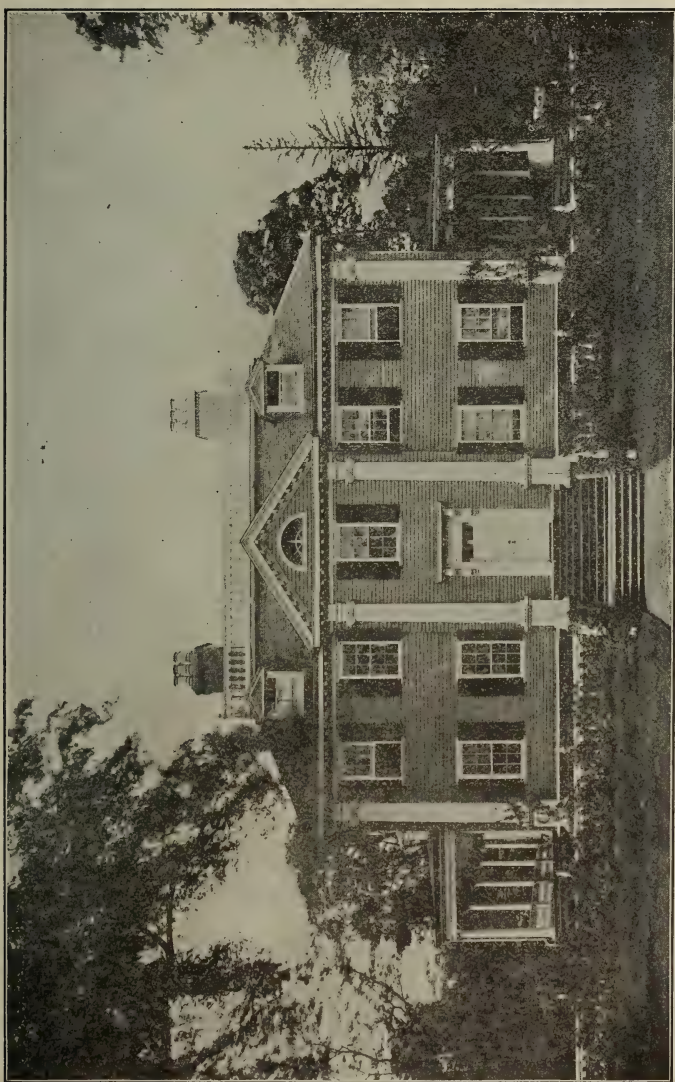


“The more distant surroundings of Cambridge, the sea-coast and woods, the lake regions of Maine and the White Mountains of New Hampshire, the Berkshire Hills of Massachusetts, and Cape Cod, afford beautiful and varied scenery for the vacation periods. The steamship service to New Brunswick and Nova Scotia gives, at comparatively slight expense, ready access to a beautiful region for an economical long vacation. The neighboring coast towns of Plymouth, Salem, Marblehead, and Gloucester are reminiscent of Colonial days and are of simple, picturesque beauty.

“The general statistics of the University are as follows: — Its material resources are represented by an invested, income-bearing endowment of about twenty-four million dollars, and buildings, laboratories, and museums, valued at nearly twenty million dollars. The grounds for instruction and research, and for the use of students, include 80 acres in Cambridge for varied University purposes; 63 acres across the river in Boston for athletic purposes; 11 acres for the Medical School buildings in Boston; 394 acres for applied biology, arboriculture, horticulture, and allied subjects, in Jamaica Plain, a suburb of Boston; 700 acres for the Summer Engineering Camp on Squam Lake in the foothills of the White Mountains; and 2000 acres, the Harvard Forest, at Petersham, for field work in forestry; a total of more than 3200 acres. To this list may be added the Arequipa Observatory in Peru.

“On the staff of the University there are 892 officers of instruction, and 145 administrative officers, preachers, curators, etc. Not counting the students in the Summer Schools (1,207), or the students in Radcliffe College (660 women), the number of students in Harvard University at the time of the issue of the Catalogue of 1915-16 was 5,275.

“The rooms of the college buildings have associations with the student days of Rufus Choate, Charles Sumner, Edward Everett, Wendell Phillips, William Fitzhugh Lee;



THE HOUSE OF HENRY WADSWORTH LONGFELLOW

of the historians, John Lothrop Motley, Francis Parkman, George Bancroft, and William H. Prescott; of Ralph Waldo Emerson, Henry David Thoreau, James Russell Lowell, Oliver Wendell Holmes; of Edward Everett Hale and Phillips Brooks, and many other men of note. The Harvard Memorial Society has made these associations more real and personal by posting in each room a printed list of the occupants from the beginning. ”

To the students in the Harvard Summer School these associations and surroundings of the oldest American college are offered, as well as the discipline and study of the present-day University summer courses. During the six weeks' session there is abundant opportunity, both in private walks and trips and in more elaborate excursions made under the guidance of competent scholars, to become acquainted with the scenes of historic events and the homes and familiar localities of great writers. Especially those teachers whose work includes American history and literature can find here, more than at any other place in the world, personal contact with historic places significant for this part of their daily teaching.

## THE SUMMER SCHOOL

Summer instruction has been offered at Harvard for forty-six years, a longer period than at any other university in this country. It began in a summer course in botany, organized in 1871 by Professor ASA GRAY, which was soon followed by courses in biology, chemistry, and geology, taught by Professors LOUIS AGASSIZ, JOSIAH P. COOKE, and NATHANIEL S. SHALER. The gradual enlargement of these courses into the Summer School of Arts and Sciences was the work of Professor SHALER.

The Harvard summer courses were primarily established in order to provide University instruction for teachers, and were planned in the belief that *short-term study can be made most effective by concentration on a single subject*. These ideas still control the Harvard Summer School. A student here is expected to enroll regularly in only one course, and to give to that for six weeks his whole time and effort. By work so arranged a good insight can be gained into the principles, the characteristic mode of thought, the main facts, and the best methods of teaching, in an important field of knowledge. A long experience has given increasing confidence in this intensive method of summer study; and only in this way can a large subject be adequately covered in so short a time.

In pursuance of this plan, the work required in any one course will ordinarily fill a student's working time. Since the pace of work is thus more rapid than in term-time, it is possible to make the courses full equivalents of the University "half-course" of the academic year, to which they strictly correspond in standard. The method of instruction varies as may be best adapted to the nature of the subject. Daily lectures are given in each subject, in some cases two lectures each day. With the lectures are combined conferences and recitations, laboratory exercises under supervision, written papers, and reading in the libraries and from text-books.

## GENERAL INFORMATION

### ADMISSION

The courses are open to both men and women, with the exception of courses in Engineering, Geology (field-work), Architecture, and Human Anatomy, which are for men only.

No entrance examination is required for admission to any of the courses. The instructors may, and in many cases should, be consulted beforehand about requisite preparation or preliminary reading. Their addresses are given on pp. 3-6.

In the courses in research and the other courses for graduate and advanced students, only competent students, and in limited number, will be accepted. Students in the research courses may attend without extra charge the lectures of any course in the same subject. For admission to any such course the instructor's permission must be secured in advance.

### REGISTRATION

Lectures in all courses begin on Monday, July 2, 1917. There will be no required exercises on Saturday in any courses other than those in Physical Education, Geology, and the courses in Biological Science given at the Harvard Medical School, *except on the first Saturday, July 7*, when all classes will meet.

Students, as soon as they arrive in Cambridge, should register at the Office of the Summer School, which during the six weeks of the summer session is in Sever Hall. On Saturday, Monday, and Tuesday, June 30 and July 2 and 3, the Summer School Office will be open for registration from 8 A.M. to 6 P.M. [Regular office hours are from 8.30 A.M. to 4.30 P.M.] Lectures in all courses will begin promptly at the announced hours on Monday morning, July 2. On Tuesday, July 3, all fees, including registration, tuition, and dormitory fees, should be paid to the Bursar, whose office is in Dane Hall (on the southeast corner of the College Yard near Harvard Square) and is open daily from 9 A.M. to 1 P.M. Students should show their instructor the Bursar's receipt.



## AUDITOR'S TICKET

Students are earnestly advised not to undertake regular work in more than one course, but in addition to the lectures in his main course a student often finds it practicable to attend those in a parallel course. For this an Auditor's Ticket may be obtained, on the additional payment of \$10, by any registered student who has paid a \$20 fee in one course. It will admit to the lectures alone in certain specified courses, but does not entitle one to laboratory privileges or other special work, or to the final examinations in these courses.

The privileges of the Auditor's Ticket do not extend to Courses in Physical Education or those at the Medical School.

## EXPENSES

The tuition fee for a course varies from \$10 to \$60, \$20 being the normal amount. Detailed statements will be found below in the List of Courses. In addition a registration fee of \$3 is required of every student.

The average necessary expenses in Cambridge for the six weeks of the Summer School, including board and room at one of the Freshman Halls, and tuition fees, may be estimated at \$80-\$90, but with great economy a smaller amount (not less than \$70) can be made to suffice.

*No reduction of fee will be allowed for late entrance; nor for withdrawal, except on account of illness or other like unavoidable cause. In no case will a reduction be allowed when the student is present during more than half the term.*

*Money to meet expenses should be brought in cash, bank drafts, cashier's checks, or money orders. Checks or drafts should be drawn on Boston or New York banks in order to save cost of exchange.*

## DORMITORY ACCOMMODATIONS

The Harvard Summer School offers accommodations for residence in Smith, Standish and Gore Halls — the new Freshman Dormitories, and board in Smith Dining Hall. Situated a few minutes' walk from the College Yard, within easy reach of the Chapel, lecture halls, gymnasium, and libraries, and facing the river front, they afford opportunity for an unusually comfortable stay in Cambridge during the six weeks' session of the Summer School. The buildings

are modern, fire-proof structures, four stories high, of red brick, with rooms for about 400 persons. Smith Hall will be reserved for men, and Standish and Gore for women. Certain suites will also



GATEWAY, STANDISH HALL

be set aside for married couples. The rooms are arranged in suites intended to accommodate from one to five persons each. All the bed-rooms are single, and every suite is provided with study, bath, and the necessary heavy furniture, — such as bed, chairs, bureau, bookcase, and table. Linen and towels will be furnished by the College. The dormitory fee, ranging from \$7.50 to \$10.50 per week, covers the care of rooms and board. Accommodations in the dormitory are only for persons registered in the Summer School. No others will be permitted to room there, except in the case of the mother of a student, or of an older friend who acts as a chaperon. There is a large common-room on the first floor of each building, for social and reading purposes. Applications for rooms should be made early to the *Secretary of the Summer School, 19 University Hall, Cambridge, Mass.*



GORE HALL

## BOARDING HOUSES AND FURNISHED APARTMENTS

Comfortably furnished rooms near the Harvard Yard are offered for rent in great abundance at prices ranging from \$1 to \$5 per week. Complete apartments (furnished) can be hired at reasonable rates by those who wish to undertake light housekeeping.

Table board can be had in private boarding-houses or in public restaurants at prices ranging from \$5 to \$10 per week.

## RAILROAD AND STEAMSHIP RATES AND SERVICE

The chief railroad stations for Harvard University are the North and South Stations in Boston, from which Cambridge is reached by the Park Street Subway to Harvard Square. Surface lines from the Park Street Subway Station pass the Medical School, which is at 240 Longwood Ave., Boston. Baggage should be sent from Boston by the Armstrong Transfer Co. or by express.

By direct steamer lines Boston may be reached, cheaply and comfortably, as follows:—

From *New York*, by the Fall River Line, leaving New York daily at 5 P.M.; by the Providence Line, leaving daily at 5 P.M.; and by the Joy Line (via Providence), leaving every week-day at 5.30 P.M.;

From *Philadelphia*, *Baltimore*, and *Norfolk, Va.*, by the lines of the Merchants' and Miners' Transportation Co., with frequent sailings (on these steamers reduced rates are given to students);

From *Savannah*, by the steamers of the Ocean Steamship Co., sailing twice a week;

From *Charleston, S.C.*, and *Jacksonville, Fla.*, by the Clyde Line, and from *Mobile* and *Galveston* by the Mallory Line, both sailing to New York, where good connection is made for Boston by either rail or steamer.

The Summer School is thus conveniently accessible to students from the more distant as well as the nearer Southern States.

From *Portland*, *Rockland*, *Bangor*, and *Eastport, Me.*, and *St. John, N.B.*, and from *Yarmouth, N.S.* (serving *Digby* and *Halifax*), the steamers of the Eastern Steamship Co. sail either daily or several times a week, and from *Halifax* and *Prince Edward Island* there are weekly sailings by the Plant Line.

Students coming from a distant state who wish to know the names of other students coming from their section of the country, in order that they may not have to travel alone, are advised to consult with the Secretary of the Summer School.



## ACADEMIC CREDIT

The summer courses are University courses, and have the same standards as other Harvard courses. Nearly all are accepted, subject to the established regulations, to count as half-courses for the degrees of *Bachelor of Arts*, *Associate in Arts*, and *Bachelor of Science*. Seminary work, research courses, and the like, are counted for these degrees only in accordance with the specific recommendation of the instructor in each case.

With the previous approval of the proper authorities, advanced work in the Summer School can be counted as part of a programme of work for the degree of *Master of Arts*; but for that degree, as for the degree of *A.B.* or *S.B.*, continuous residence at the University of at least one academic year is required. Summer residence may not be counted as fulfilling part of this academic year of study. Candidates must possess an elementary knowledge of two modern foreign languages (ordinarily French and German), and must pursue, and complete with distinction, a programme of study forming a consistent plan of work, with a definite aim, and lying either in one field or in related fields. Such a programme must in every case be approved beforehand by the appropriate Division Committee of the Faculty of Arts and Sciences and by the Administrative Board of the Graduate School of Arts and Sciences. With reference to the degree of *A.M.*, the summer courses are especially useful to candidates who need more than a full year of resident study for the degree, or who lack some collateral work which cannot conveniently be done during the year of required residence. Moreover, students intending to carry on advanced study at Harvard in the academic year will often find much saving of time, and other advantages for their work in the following winter, if they have already become familiar with the Harvard laboratories, libraries, methods, and teachers, through taking a single course in the preceding summer.

The degree of *Doctor of Philosophy* is not given on the ground of any number of courses taken, or of a stated period of study, but only for high attainment gained by long study in a special field, manifested in examinations and a thesis. For the full requirements for the *Ph.D.* see the Graduate School catalogue for 1916-17, pp. 74-77. Students working for this degree at Harvard or elsewhere, especially



while engaged in research for their theses, will be heartily welcomed at the libraries of the University, and in some departments laboratory opportunities can be offered to them. They will find in the advanced courses of the Summer School opportunity to carry on their work under the advice and supervision of instructors.

For further information with regard to the Graduate School of Arts and Sciences, and the degrees of A.M. and Ph.D., apply to G. W. ROBINSON, *Secretary*, 24 University Hall, Cambridge, Mass.

## EXAMINATIONS AND CERTIFICATES

Examinations and other tests of the same grade as those required in corresponding courses in Harvard College will be held at the close of each course. It is not, however, compulsory to take the final examinations.

The Office will send upon request an Official Report to all students registered in the Summer School of Arts and Sciences, with a statement of their work as follows: A, Excellent; B, Good; C, Fair; D, Unsatisfactory; E, Failure. "Abs." indicates failure to obtain credit for the course, owing to absence from the final examination. An asterisk (\*) indicates that the course does not count for a degree.

The grades of Harvard students will be reported directly to the Recorder's Office.

In Physical Education a special certificate is awarded to those who complete satisfactorily the four years' course. Students are admitted to a summer course, whether they are candidates for the certificate or not.

## HARVARD STUDENTS

For students in Harvard College, grades in Summer School courses will be accepted as equivalent to the same grades in courses given in term-time.

By vote of the Faculty of Arts and Sciences, December 21, 1915, it was established:

"That undergraduate candidates for a degree with distinction who have the privileges of the Dean's list be permitted to count towards the degree of A.B. or S.B. two summer courses taken in Cambridge in the same summer."

Other undergraduates in Harvard College are not permitted in any one summer to count more than one of the summer courses given in Cambridge, obtaining credit for it as a "half-course."

Undergraduates wishing to take a summer course for the purpose of making up a failure in college will be admitted to the following courses *only*: —

Chemistry S1 (Elementary Theoretical and Descriptive Chemistry).

French S1 (Second-year College French).

German S4 (Second-year College German).

Mathematics SK (Trigonometry).

Engineering courses given at the Engineering Camp.

Undergraduates from other colleges taking summer work in order to make up a deficiency will be admitted to other courses than the above-mentioned only by special permission from Professor WEBSTER.

## MEDICAL SCHOOL

Advanced instruction in Biological Science is offered during the summer in a series of courses in the laboratories of the Harvard Medical School in Boston. These courses are in the fields of Human Anatomy, Bacteriology, Biological Chemistry, Embryology, Histology, Microscopical Technique, Neurology, Pathology and Physiology. They are specially designed to afford opportunity for teachers of Biology in colleges, normal schools, and the more advanced secondary schools to keep pace with the rapid advance of knowledge in these branches, with the aid of the rich collections and complete equipment of the Harvard Medical School, and under the supervision of specialists in the several fields.

## SOCIAL LIFE AND RECREATION

On Friday evening, July 6, there will be a reception at the Harvard Union to all members of the Summer School.

On Wednesday evening, August 8, the annual Gymnastic Exhibition by the students in the courses in Physical Education will be held in the Hemenway Gymnasium.

Phillips Brooks House, with parlors and a writing-room, will be open for social purposes, and various social gatherings are held there during the session of the School. The University tennis courts are kept in order through the summer, and at one of the University boat-houses boats for rowing on the Charles River can be hired by members of the Summer School. The electric car lines radiating from Boston and Cambridge, and the steamboats of Boston Harbor, offer abundant opportunities for afternoon and Saturday excursions

to parks, hills, woods, lakes, and the beaches and rocks of the neighboring seashore. Sea-bathing can be had at many points within easy reach. Private swimming lessons from competent instructors at the pool of the Sargent Gymnasium and of the Cambridge Y. M. C. A. can be arranged for a small fee.

## CHAPEL AND CHOIR

Morning Prayers, conducted by representatives of various denominations, are held daily at 8.45 A.M. in Appleton Chapel. For these services a choir will, if possible, be organized from among the students.

## MUSICAL ENTERTAINMENTS

A series of organ recitals will be given by the choir-master, assisted by various soloists. These organ recitals are given every Wednesday evening in the College Chapel, beginning at quarter-past seven and lasting a half-hour only, so as to enable students to attend the lectures, etc., which begin at eight o'clock.

Other musical entertainments will be furnished by Professor LEWIS and the Department of Music.

## ART MUSEUM VISITS

Five visits to the Boston Museum of Fine Arts, under the guidance of Museum Docents, will be provided for limited numbers without charge.

## HISTORICAL EXCURSIONS

Historical Excursions (carefully planned both for enjoyment and instruction) are arranged for Wednesday afternoons and Saturdays to the districts of greatest historical and literary interest in eastern Massachusetts. The Excursions usually include the following: —

- Cambridge and Mt. Auburn
- Bunker Hill and Old Boston
- Lexington and Concord
- “Whittier Land” and Andover
- Plymouth
- Salem and Danvers

## PUBLIC READINGS AND LECTURES

During the summer session Professor COPELAND will give a course of evening Lectures and Readings in English and American Literature in the New Lecture Hall.

Evening Readings from English Literature, intended especially for students in Public Speaking but open to all Summer Students, will be given by Professor WINTER and his staff.

There will also be single lectures on various subjects of general interest by persons of distinction.

## STATISTICS

The total enrolment of the Summer School in 1916 was 1,044 persons, of whom 47 per cent were men and 53 per cent women. 65 per cent of the students enrolled in general courses were teachers and school officers. The residence of the students enrolled in general courses was as follows: —

New England States . . . . .	346
Middle States . . . . .	140
Southern States . . . . .	61
North Central States . . . . .	75
Western States . . . . .	19
Foreign Countries . . . . .	16

Further information and advice will be gladly furnished on application to the SECRETARY OF THE SUMMER SCHOOL,

19 University Hall,  
Cambridge, Mass.

## LIST OF COURSES

### ARCHITECTURE

- S4a. Elements of Architectural Form. The Orders. Elementary Architectural Design. Problems, conferences, and criticism. *Daily, 9-5; Saturdays, 9-1.* Associate Professor JOHN S. HUMPHREYS and Mr. WILLIAM G. PERRY.
- S4b. Architectural Design. (Intermediate Course.) Problems, conferences, and criticism. *Daily, 9-5; Saturdays, 9-1.* Associate Professor JOHN S. HUMPHREYS and Mr. WILLIAM G. PERRY.
- S4c. Architectural Design. (Advanced Course.) Problems, conferences, and criticisms. *Daily, 9-5; Saturdays, 9-1.* Associate Professor JOHN S. HUMPHREYS and Mr. WILLIAM G. PERRY.

These courses will be given only in case five or more students enroll in the course. Only one of them may be taken by any one student in a single summer. They are open to men only.

Thesis. — Students registered in the School of Architecture, who have by vote of the Council been admitted to candidacy for the degree of Master in Architecture, will have opportunity of carrying on their work on the thesis design to be submitted for the degree. Associate Professor JOHN S. HUMPHREYS, Mr. WILLIAM G. PERRY, and Associate Professor CHARLES W. KILLAM.

The summer courses in Architecture begin on Monday, July 2, and last until Saturday, August 11, — a period of six weeks. The fee for each course is \$35 — with a registration fee of \$5 in the case of those members of the course who are not registered in the University.

### CHEMISTRY

- S1. Elementary Theoretical and Descriptive Chemistry. — Lectures and laboratory work. *Five times a week, at 9.* Asst. Professor ARTHUR B. LAMB. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$7.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B. It is accepted in fulfilment of the entrance requirement in Chemistry

\* If (as is usually the case) the actual breakage comes to less than the sum deposited, any balance remaining at the end of the session will be returned to the student; if the deposit is insufficient, an additional charge will be made.



for Harvard or Radcliffe College, and is also adapted to meet the requirement for admission to the Harvard Medical School. Students in Harvard College who have passed Chemistry S1 are admitted to Chemistry 1. If Chemistry S1 is counted for a degree, Chemistry *A* may be counted as a half-course only.

- S2. Organic Chemistry. — Lectures and laboratory work. *Five times a week, at 11.* Dr. JAMES B. CONANT. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry *A* or *B* or 1, or an equivalent. For students in Harvard College it cannot be counted in addition to Chemistry 2.

- S3. Qualitative Analysis. — Lectures and laboratory work. *Five times a week, at 9.* Asst. Professor GEORGE S. FORBES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$7.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry *A* or *B* or 1, or an equivalent. For students in Harvard College it may be substituted for the first half of Chemistry 3; and if Chemistry S3 is counted for a degree, Chemistry 3 will count as a half-course only.

- S4. Quantitative Analysis. — Laboratory work. *Five times a week, at 9.* Professor GREGORY P. BAXTER. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B. Although, as ordinarily given, it is not the equivalent of either half of Chemistry 4, and will not be accepted in Harvard or Radcliffe College as sufficient preparation for more advanced work in Chemistry, properly qualified students will be given the opportunity to perform the laboratory work of either the first or second half-year of Chemistry 4. In this case, students in Harvard or Radcliffe College may count Chemistry 4, in addition to Chemistry S4, as a half-course only.

- S6. Physical Chemistry. — Lectures and laboratory work. *Five times a week, at 11.* Asst. Professor GRINNELL JONES. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50.\*

This course is accepted as a half-course for A.B., A.A., and S.B. Students in Harvard College who satisfactorily complete this course will be admitted to Chemistry 6 without having taken Chemistry 8, and may also omit the laboratory work in Chemistry 6. Chemistry 6 taken in this way will count as a half-course only.

\* See note, page 24.

- S22. Experimental Organic Chemistry. — Chiefly laboratory work. *Conferences five times a week, at 10.* Dr. JAMES B. CONANT. Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$18.\*

This course is accepted as a half-course for A.B., A.A., and S.B., provided the student has passed Chemistry 2 or its equivalent. For students in Harvard College it cannot be counted in addition to Chemistry 22.

#### COURSES FOR ADVANCED STUDENTS

Tuition fee, \$25; laboratory fee, \$10; breakage fee, \$12.50

- S20e. Research in Inorganic and Physical Chemistry. Asst. Professor ARTHUR B. LAMB.
- S20f. Research in Inorganic and Physical Chemistry. Professor GREGORY P. BAXTER.
- S20h. Research in Physical Chemistry. Asst. Professor GEORGE S. FORBES.
- S20i. Research in Physical Chemistry. Asst. Professor GRINNELL JONES.
- S20l. Research in Organic Chemistry. Dr. JAMES B. CONANT.

Properly qualified students will be given the opportunity to perform the laboratory work in Chemistry 9, Chemistry 10, and Chemistry 13, during the summer session.

#### ECONOMICS

- S1. Principles of Economics. *Five times a week, at 11.* Asst. Professor BENJAMIN M ANDERSON, Jr. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

- S2. Economic History of Europe and the United States during the Nineteenth Century. *Five times a week, at 10.* Professor EDWIN F. GAY. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Economics 2.

NOTE: See also *Sociology* S1.

\* See note, page 24.

## EDUCATION

- S7. Psychological Principles of Education. — Survey of psychological problems in education; critical examination of contemporary doctrines; discussion of guiding principles in teaching and discipline. Lectures, reading, reports, and conferences. *Five times a week, at 9.* Dr. JOHN M. BREWER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 7.

- S3a. Organization and Administration of Schools and School Systems. — Programmes of study; duties and opportunities of superintendents and principals. Lectures, reports, and discussions. *Five times a week, at 9.* Dr. FRANK W. BALLOU, Director of Investigations, School Committee Rooms, Boston, Mass. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3a.

- S3b. Principles of Secondary Education. — A consideration of the factors underlying the theory and practice of secondary education. *Five times a week, at 10.* Asst. Professor ALEXANDER J. INGLIS. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3b.

- S3c<sup>1</sup>. Elementary Education. — Methods of teaching in the elementary school. Introductory course. *Five times a week, at 11.* Mr. GEORGE A. MIRICK, formerly Assistant Commissioner of Education in charge of Elementary Schools for New Jersey. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3c.

- S3c<sup>2</sup>. Elementary Education. — Methods of teaching in the elementary school; problems of supervision. Course for principals and experienced teachers. *Five times a week, at 9.* Mr. GEORGE A. MIRICK, formerly Assistant Commissioner of Education in charge of Elementary Schools for New Jersey. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3c.

- S4. Educational Measurement. — The methods and results of statistical and experimental studies in education. Standards and tests, especially in elementary school subjects. *Five times a week, at 11.* Dr. FRANK W. BALLOU, Director of Investigations, School Committee Rooms, Boston, Mass. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 4.

- S12. Play in Education. — The place and value of play as a means of education; conduct and administration of play in schools and school systems; social aspects of play and recreation. *Five times a week, at 11.* Asst. Professor GEORGE E. JOHNSON. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S14. Child Development. — Stages and characteristics in the mental and physical growth of children; the methods and results of child study and their bearing on teaching, the school programme, and home training. *Five times a week, at 9.* Asst. Professor GEORGE E. JOHNSON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 14.

- S16. The Principles of Vocational Guidance. — Survey of the movement for vocational guidance and discussion of problems. Methods of counselling; coöperation of school, industry, and commerce; vocational problems in the school programme; educational problems of employment. *Five times a week, at 10.* Dr. JOHN M. BREWER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 16a, 16b, or 20i.

- S15. The Junior or Intermediate High School and Related Movements. — Plans for the reorganization of secondary education. Lectures, reading, discussion, and reports. *Five times a week, at 9.* Asst. Professor ALEXANDER J. INGLIS. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 15.

- S18. Social Studies in Secondary Education, with special reference to the Teaching of Community Civics in the High School and Junior High School. *Five times a week, at 9.* Mr. CLARENCE D. KINGSLEY, Agent for High Schools, Massachusetts State Board of Education; Chairman, Commission on the Reorganization of Secondary Education of the National Education Association. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S17a. The Teaching of English in Secondary Schools. — The materials, methods, and equipment of a teacher of English in high schools and preparatory schools. *Five times a week, at 10.* Mr. CHARLES S. THOMAS, Newton High School, Newtonville, Mass. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S17b. Special Problems in the Teaching of English in Secondary Schools. — For advanced students and experienced teachers. Investigation of special problems in the teaching of literature and composition in the secondary schools. *Five times a week, at 11.* Mr. CHARLES S. THOMAS, Newton High School, Newtonville, Mass. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S19. The Teaching of Modern Languages in Secondary Schools, with special reference to the Teaching of French. *Five times a week, at 9.* Mr. WILLIAM B. SNOW, Headmaster of the English High School, Boston, Mass. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.



S20c. The Psychology of Mentally Deficient, Retarded, and Exceptional Children. — Lectures, clinics, exercises in mental testing and diagnosis, and observation of school and institutional cases and of the methods of training. *First three weeks, mornings, 9 to 12, with laboratory exercises in sections; second three weeks, afternoons, 2 to 5, with morning hours for class and individual work as may be arranged.* Asst. Professor WALTER F. DEARBORN, with the coöperation of Dr. WALTER E. FERNALD, Superintendent of the Massachusetts School for the Feeble-minded at Waverley. Tuition fee, \$35.

The work of the course will demand practically the entire time of the members of the class; although, subject to the approval of the instructors in charge, attendance at the lectures of another course may be undertaken.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 20c.

The number of students in the course will be limited. Persons desiring to enter are advised to make early application. A blank will be furnished upon application to the Secretary of the Summer School.

NOTE: See also *Music S15* and *Public Speaking and Oral English S27*.

## ENGINEERING SCIENCES — SURVEYING

The following courses will be given at the Harvard Engineering Camp, Squam Lake, N. H. Men only will be admitted.

For men who have *not* paid a full year's tuition in Harvard College the fees for 1917 will be as follows: —

For Engineering Sciences 4a . . . . .	\$75
“ “ “ 4d . . . . .	92
“ “ “ 4a and first half of 4d . . . . .	121

The fee covers board, lodging in a tent, laboratory charges (but not break-ages), and tuition.

\*ENGINEERING SCIENCES 4a hf. Surveying. — Use of instruments; plane and topographical surveying; levelling; map drawing and field practice. *Five weeks, beginning Saturday, June 23.* Professor H. J. HUGHES, and assistants.

Open to students who have studied plane trigonometry.  
See note after Course 4d.

\*ENGINEERING SCIENCES 4d. Railroad Surveying.—Railroad curves and location; field and office practice. *Six weeks, beginning at the close of Course 4a.* Professor H. J. HUGHES, and assistants.

Open to students who have passed satisfactorily in Course 4a or its equivalent.

\* NOTE ON COURSES 4a and 4d. — Course 4a and the first three weeks of Course 4d, if both are taken in the same summer, may be counted as one course toward the degree of A.B., A.A., and S.B.; Course 4a taken alone counts as one half-course toward A.B., A.A., and S.B.; Course 4d taken alone counts as one full course toward A.B., A.A., and S.B.

*For further information address Professor H. J. Hughes, Cambridge, Massachusetts.*

NOTE: The course in Municipal Sanitation, *Government S31*, is omitted in 1917. It is expected, however, that this course will be given again in 1918.

## ENGLISH

### ENGLISH COMPOSITION AND LITERATURE

SA. English Composition and Methods of Teaching. — Lectures, recitations, written exercises, and conferences. *Five times a week, at 9.* Professor JAMES HOLLY HANFORD, University of North Carolina. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. and S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (History and Development of English Literature) is offered as the equivalent of the other half. Neither English SA nor English S28 may be counted for a degree in addition to English A.

SC. English Composition (advanced course). — Lectures, short themes, longer themes, and conferences. *Five times a week, at 9.* Mr. ROY FOLLETT, Brown University. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it is accepted for A.B. and S.B. as equivalent to one-half of English A (which is a full course) provided English S28 (History and Development of English Literature) is offered as the equivalent of the other half. Neither English SC nor English S28 may be counted for a degree in addition to English A.

- S67. English Composition. — Practice in writing, in the criticism of manuscript, and in instruction by conferences and lectures. Discussion of the principles of composition and of the organization and management of courses in English Composition. *Five times a week, at 11.* Professor CHESTER N. GREENOUGH. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to English 67.

- S3. Anglo-Saxon. *Five times a week, at 10.* Asst. Professor KENNETH G. T. WEBSTER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to English 3a.

- S45. History of English Literature in the Nineteenth Century. *Five times a week, at 11.* Asst. Professor CHARLES T. COPELAND. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

- S33. American Literature. — Lectures, reading, and reports. *Five times a week, at 9.* Professor CHESTER N. GREENOUGH. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S70. Shakspeare. — Lectures and study of text. *Five times a week, at 9.* Professor JOHN L. LOWES, Washington University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

NOTE: See also *Education S17a* and *S17b*.

## PUBLIC SPEAKING AND ORAL ENGLISH

- S8. Fundamentals of Speaking and Oral Reading. — Cultivation of the voice and training in the elements of oral expression. *Five hours a week, at 9.* Mr. CURTIS W. CHENOWETH, Harvard University, and Asst. Professor BENJAMIN C. VAN WYE, University of Cincinnati.

- S17. Oral English. — Practice in the vocal interpretation of literature, and in the forms of oral discussion. Individual training, and study of methods of teaching. Careful training of voice. *Five hours a week, at 11.* Associate Professor IRVAH L. WINTER, Harvard University, and Associate Professor GEORGE McF. McKIE, University of North Carolina.
- S10. Public Speaking. — Study of principles, and practice in the delivery of speeches, both prepared and extemporaneous. Special training of voice. *Five hours a week, at 11.* Professor EDWIN D. SHURTER, University of Texas, and Mr. CHARLES H. WOOLBERT, formerly Head of Staff in Public Speaking, University of Illinois.
- S21. Dramatic Interpretation. — Training in speech and in the acting of the modern play. *Five hours, afternoons, except Wednesday and Saturday.* Associate Professor IRVAH L. WINTER and Associate Professor GEORGE McF. McKIE, and assistants.
- S20. Special Courses, in Voice, for speaking or singing; in Public Speaking; or in Public Reading. — Private individual instruction. Arrangements as to instructor, hours, fees, and credit, to be made by consultation or correspondence with Associate Professor IRVAH L. WINTER.

#### ADVANCED COURSES

##### *For Teachers of Public Speaking and of Oral English and for other Advanced Students*

- S7. Vocal Technique. Advanced course. — Voice Development; the correction of vocal faults; the scientific consideration of voice in its physical aspects. Lectures, demonstrations, and individual training. *Five hours a week, at 9.* Mr. CURTIS W. CHENOWETH and Asst. Professor BENJAMIN C. VAN WYE.
- S15. Vocal Interpretation. Advanced course. — Dramatic literature, including Shakspeare; narrative prose and verse and lyric poetry. Class discussions and individual training. *Five hours a week, at 10.* Associate Professor GEORGE McF. McKIE and Asst. Professor BENJAMIN C. VAN WYE.
- S27. Principles and Methods in Teaching Public Speaking and Oral English. — A critical study of various text-books; a consideration of the psychology and pedagogy of the subject; the organizing and conducting of classes. Lectures, reports, conferences. *Five hours a week, at 12.* Associate Professor IRVAH L. WINTER and Dr. JOHN M. BREWER, Harvard University.

## FEES

The fee for a single course in Public Speaking, *five hours* a week, is \$20; for two *five-hour* courses, \$30. The fee for three courses is \$40. The auditor's ticket for one course is \$10.

## CREDITS

Two *five-hour* courses may be counted as a half-course for A.B., A.A., or S.B., provided no course in Public Speaking in Harvard College has been so counted. For students in Harvard College, summer courses in Public Speaking cannot be counted in addition to any such courses given in regular term-time. Neither academic credit nor the Summer School certificate is given, in this subject, for more than ten hours of work, though an instructor's statement may be given for additional approved work.

Course S8 is generally required of students taking any other course in this subject, unless they have had vocal training.

For full information regarding these courses in Public Speaking and Oral English, send for special circulars.

## FINE ARTS

- S1a. Principles of Drawing and Painting, with practice. *Five times a week, at 9.* Asst. Professor ARTHUR POPE, assisted by Mr. MEYRIC R. ROGERS. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Fine Arts 1a.

- S5. The Italian Painters of the Middle Ages and the Renaissance. *Five times a week, at 10.* Mr. CLARENCE KENNEDY, Smith College. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Fine Arts 5c or 5h.

- S9c. History and Development of the House. — Lectures, and prescribed reading. *Five times a week, at 11.* Mr. HENRY A. FROST. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Fine Arts 9c.

This course will not be given unless six or more apply for it. Those who desire to take the course should apply in writing to Mr. HENRY A. FROST, Robinson Hall, Cambridge, Mass.



## FRENCH

- S4. Elementary French. — Reading, grammar, and composition. *Five times a week, at 9.* Mr. GEORGE B. WESTON. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S1. Second-year College French. — Reading, grammar, and composition. *Five times a week, at 11.* Mr. EUGÈNE L. RAICHE. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 1.

- S2. Third-year College French. — Reading and composition. *Five times a week, at 11.* Mr. GEORGE L. LINCOLN. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 2.

- S3. French Conversation. *Five times a week, at 9.* Mr. EUGÈNE L. RAICHE. Tuition fee, \$20; if taken in addition to another course in French, the fee is \$10.

This course does not count toward any degree.

- S16. The Comedy of Manners in France from Scribe to the Present Time. *Five times a week, at 10.* Asst. Professor LOUIS ALLARD. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to French 16.

NOTE: See also *Italian* and *Spanish*.

## GEOLOGY

Correspondence concerning the summer courses in Geology should be addressed to the instructors in charge not later than June 1, 1917. These courses are open to men only. Information about equipment and expenses will be furnished on request.

- S5. Field Geology. — Field work in the Rocky Mountains of Montana. *Six days a week, for five weeks, beginning at Bozeman, Montana, July 6th.* Associate Professor JAY B. WOODWORTH.

Geology 4 or its equivalent is required for admission to this course. Fee, \$20, which must be paid to the Bursar of Harvard University on or before June 28th. The members of the class will assemble at Bozeman on July 5th.

- [S6. Field work in Physiography and General Geology. — Field course in the San Juan Mountains of southwestern Colorado. Professor WALLACE W. ATWOOD.]

Omitted in 1917. It is expected that this course will be given again in 1918.

*Primarily for Graduates*

- S20a. Physiographic Field Studies. *Six days a week, for five weeks or ten weeks.* Professor WALLACE W. ATWOOD.
- S20d. Geological and Petrographical Field Studies. *Six days a week, for five weeks or ten weeks.* Professor JOHN E. WOLFF.
- S20e. Research in Structural or Glacial Geology. *Six days a week, for five weeks or ten weeks.* Associate Professor JAY B. WOODWORTH.

No tuition fee is charged in the S20 courses and the work of the student may be directed by correspondence. These courses can be taken only with the permission of the instructor. All the above courses are accepted to count for A.B., A.A., or S.B., and with the approval of the Dean of a Graduate School any of the courses in field work may be counted as a part of a programme for A.M. in Geology or Geography.

## GERMAN

- SA. Elementary German. — Reading, grammar, and composition. *Five times a week, at 11.* Dr. ASBURY H. HERRICK. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A.

- S4. Second-year College German. — German prose and poetry; grammar and practice in writing German. *Five times a week, at 9.* Dr. FREDERICK W. C. LIEDER. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted by students in Harvard College who have passed any elective course in German, or who have passed in Advanced German for admission to College.

- S3. German Literature of the Nineteenth Century. *Five times a week, at 9.* Asst. Professor WILLIAM G. HOWARD. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to both German 26a and 26b.

## GOVERNMENT

- S1. Principles of Government, especially American Government. — Lectures, parallel reading, and written exercises. *Five times a week, at 9.* Asst. Professor ARTHUR N. HOLCOMBE or Mr. ALFRED C. HANFORD. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 1.

- S4. Elements of International Law and Modern International Questions. — Lectures, parallel reading, and written reports. *Five times a week, at 9.* Professors PHILIP M. BROWN, Princeton University, and GEORGE G. WILSON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 4.

- [S31. Municipal Sanitation. — Public Health and Safety from an administrative point of view. *Five times a week, at 12.* Professor GEORGE C. WHIPPLE. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Government 31.]

Omitted in 1917. It is expected that this course will be given again in 1918.

NOTE: See also *History S70*.

## GREEK

- SG. Greek for Beginners. *Five times a week, at 10.* Professor CLIFFORD H. MOORE. Tuition fee, \$20.

NOTE: See also *Latin S1*.

## HISTORY

- S1. European History. — Mediaeval and Modern. Lectures and reports. *Five times a week, at 9.* Professors CHARLES H. HASKINS and EDWIN F. GAY. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 1.

- S4. History of England. — Lectures, discussions, and written reports. *Five times a week, at 10.* Mr. HAROLD J. LASKI. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to History 9, 11, or 12.

- S5. American Politics in the Nineteenth Century. — Lectures, reading, discussions, and written reports. *Five times a week, at 11.* Professor WILLIAM MACDONALD, Brown University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S32. The Development of American Nationality, 1760–1917. — Lectures, readings, discussions, and a written examination. *Five times a week, at 12.* Professor WILLIAM MACDONALD, Brown University. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S25. Historical Bibliography and Criticism. — *Four hours weekly, with individual conferences.* Professor CHARLES H. HASKINS.

This course is designed particularly for graduate students. Others possessing sufficient preparation may be admitted by the instructor.

(a) Historical Bibliography. *Monday, 3.30–5.30.* Tuition fee, \$10.

(b) Historical Criticism. *Wednesday, 3.30–5.30.* Tuition fee, \$10.

This course is accepted as a half-course toward degrees in Harvard University. Either *a* or *b* may be taken separately, but students seeking credit must take both halves.

- S70. Factors and Problems in International Politics. — Lectures, parallel reading, and written reports. *Five times a week, at 11.* Professors ARCHIBALD C. COOLIDGE and GEORGE G. WILSON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

NOTE: See also *Economics S2* and *Government S4*.

## ITALIAN

- S1. Elementary Italian. — Reading, grammar, and composition. *Five times a week, at 11.* Mr. GEORGE B. WESTON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Italian 1.

- S5. Modern Italian Literature. — Prose and poetry of the Nineteenth Century. Composition and Conversation. *Five times a week, at 12.* Mr. GEORGE B. WESTON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Italian 5.

NOTE: See also *French* and *Spanish*.

## LATIN

- S1. Latin for Teachers. — Grammar; methods of teaching; Caesar, Cicero, Virgil, and selections from other authors suited to school reading. *Five times a week, at 9.* Professor CLIFFORD H. MOORE. Tuition fee, \$20.

This course is accepted as a half-course for the degree of A.A. For students in Harvard College it cannot be counted toward the degree of A.B. or S.B.

NOTE: See also *Greek SG*.

## MATHEMATICS

- SK. Logarithms and Trigonometry. — Lectures and problems. *Five times a week, at 9.* Asst. Professor DUNHAM JACKSON. Tuition fee, \$30; for teachers and other persons not undergraduates, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but cannot be counted by students in Harvard College in addition to Mathematics *A*, *B*, or *K*, or by students who have counted Trigonometry for admission.

- SC. Plane Analytic Geometry. *Five times a week, at 11.* Professor MAXIME BÔCHER. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Mathematics *A* or *C*.



## MEDICAL SCIENCES

## COURSES AT THE HARVARD MEDICAL SCHOOL

*Given by the Graduate School of Medicine*

## ANATOMY

- S101. Human Anatomy. — Dissection course. Laboratory dissection by the student under general supervision of the instructor. There is an artificially cooled dissecting room especially for summer work. *July 1-31, mornings, afternoons, or all day.* Repeated in August. Women are not admitted to this course. Fee, \$30, for each part, and an additional fee of \$5 for each part for material. Associate Professor JOHN WARREN and Asst. Professor DAVID CHEEVER, Dr. ROBERT M. GREEN, and Assistants.
- S110. Topographical Anatomy. — Laboratory work under supervision of instructor. Study of frozen sections and special preparation. *June, mornings or afternoons.* Repeated in September, if a sufficient number of students apply. Women are not admitted. Fee, \$50. Additional charge of \$1.50 for drawing material. Associate Professor JOHN WARREN and Dr. ALEXANDER S. BEGG, and Assistants.
- S120. Anatomy of the Central Nervous System and Special Sense Organs. — Laboratory course. *June, daily, 9 to 1.* Repeated in July. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.

## BACTERIOLOGY

- S156. Elementary Bacteriology. — Laboratory work under the supervision of the instructor. *July 1-31, 3.30 to 6 P.M.* Women are admitted. Fee, \$30, with an extra charge of \$5 for materials. Microscopes may be rented from the Harvard Medical School. Dr. CLEVELAND FLOYD.

## BIOLOGICAL CHEMISTRY

- S146. Biological Chemistry. — Laboratory practice and discussions. Students may begin this course, *June 1 to June 21 and continue for six weeks, 9 to 1, and 2 to 5, daily.* Women are admitted. Fee, \$60. Professor OTTO FOLIN and Asst. Professor WALTER R. BLOOR.
- S147. Biological Chemistry. — Advanced course. Individual work. *July 1 to 31.* Women are admitted. Fee, \$70 for all day; \$40 for a half-day. Professor OTTO FOLIN and Asst. Professor WALTER R. BLOOR.

## EMBRYOLOGY

- S118. Embryology. — Elementary course. Essentially a study of mammalian embryology in the form presented to medical students during their first year. Laboratory exercises. *June, daily, 9 to 1.* Repeated in July. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.
- S122. Embryology. — Advanced course. Laboratory exercises. *June to September.* Registration fee, \$5. Additional fees for instruction and material will be arranged after conference with the instructor. Associate Professor FREDERIC T. LEWIS.

## HISTOLOGY

- S117. Histology. — Elementary course. This course deals with the microscopic structure of human tissues and organs, and is essentially identical with the course in this subject required of first-year medical students. Laboratory exercises. *June, daily, 9 to 1.* Repeated in July. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.
- S121. Histology. — Advanced course. Laboratory exercises. *June to September.* Registration fee, \$5. Additional fees for instruction and material will be arranged after conference with the instructor. Associate Professor JOHN L. BREMER.

## MICROSCOPICAL TECHNIQUE

- S115. Microscopical Technique and Laboratory Methods. — Special course, dealing with the ordinary and special methods of fixing, imbedding, cutting, and staining, reconstruction and other means of research. *June, daily, 9 to 1.* Repeated in July. Women are admitted. Fee, \$35. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.

## PATHOLOGY

- S176. General and Special Pathology. — Lectures and laboratory work. *July 23 to August 31, 2 to 5 P.M., daily except Saturday.* Women are admitted. Fee, \$50. A deposit of \$10 will be required for material. Extra charge for microscope. By MEMBERS OF THE DEPARTMENT.

## PHYSIOLOGY

- S133. **Practical Physiology.** — Lectures, laboratory, and demonstrations. This course is adapted for well prepared teachers in high schools, normal schools, and colleges. *July 1-31, daily, 9 to 1, and, except Saturdays, 3 to 5.* Women are admitted. Fee, \$50; for the morning course, \$30; for the afternoon course, \$30.

There is an extra charge of \$5 for laboratory material in each of these courses. For the lecture and demonstration course without laboratory work, the fee is \$20. Instructor to be announced.

*For further information regarding the courses in Medical Sciences, address the Dean of the Graduate School of Medicine, Harvard Medical School, Longwood Avenue, Boston, Mass.*

## MUSIC

- S1. **Musical Appreciation.** Elementary course. — Systematic studies in musical essentials from the listener's standpoint *Five times a week, at 9.* Professor LEO R. LEWIS, Tufts College. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Music 4.

- S10. **The Analysis of Representative Classics and Modern Compositions.** *Five times a week, at 11.* Professor LEO R. LEWIS, Tufts College. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Music 4.

- S15. **The Elements of Musical Grammar and of General Musicianship in their Application to Public School Teaching.** *Five times a week, at 12.* Associate Professor WALTER R. SPALDING. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

## PHILOSOPHY

- S1. **William James and Henri Bergson.** — A comparative study of two modern thinkers. *Five times a week, at 12.* Asst. Professor R. F. ALFRED HOERNLÉ. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.

- S2. General Problems of Philosophy. — An introduction to Philosophy through a study of some of the chief problems of Epistemology (Theory of Knowledge) and Metaphysics (Theory of Reality). *Five times a week, at 10.* Asst. Professor R. F. ALFRED HOERNLÉ. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Philosophy 1.

- S20. Research in Philosophy. — Topics for advanced study will be selected, according to the students' special interests, from the fields of Logic, Epistemology, Metaphysics, or the History of Philosophy. The course will be conducted by means of conferences, *at hours to be arranged with the instructor.* Asst. Professor R. F. ALFRED HOERNLÉ. Tuition fee, \$20.

### PHYSICAL EDUCATION

Courses in Theory. — Graded series, covering four years and including Anatomy, Physiology, Histology, Anthropometry, Physical Diagnosis, Methods and Practice of Teaching, Preventive Medicine, etc. Dr. DUDLEY A. SARGENT, *Director.* Fee, \$25.

Courses in Practice. — Graded series, covering four years and including Swedish and German Floor Work, Gymnastic Games, Field and Track Athletics, Aesthetic and Folk Dancing, Corrective Gymnastics, Playground Work, etc. Dr. DUDLEY A. SARGENT, *Director.* Thirty instructors and ten assistants. Fee, \$25.

*A special circular containing full particulars will be sent on application to the Director, Dr. Dudley A. Sargent, Harvard University, Cambridge, Mass.*

### PHYSICS

- S1. General Physics. — Modern developments of the science. Lectures, demonstrations, and laboratory work. *Two lectures, daily, at 9 and 2.* Asst. Professor RHYS D. EVANS, Bowdoin College. Tuition fee, \$30.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Physics B, nor to remove an entrance condition in Elementary Science. This course covers the requirement in Physics for entrance to the Harvard Medical School.

## PSYCHOLOGY

*For Courses in Psychology, see Education S7 and S20c.*

## PUBLIC SPEAKING AND ORAL ENGLISH

*(For Courses in Public Speaking and Oral English, see English.)*

## SEMITIC

- S9. Jewish Literature and Life from the Second Century to the Present Time. *Five times a week, at 9.* Dr. HARRY A. WOLFSON. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Semitic 9.

This course will not be given for fewer than five persons.

## SOCIAL ETHICS

- S1. Contemporary Social Problems and Policies. — Their settlement through philanthropic, coöperative and governmental agencies. Lectures, reading, excursions, and reports. *Five times a week, at 9.* Asst. Professor JAMES FORD. Tuition fee, \$20 (not including excursions).

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Social Ethics 1.

- S20. Social Research. — Practice in the study of General Social Service and Housing Conditions. *At hours to be arranged with the instructor.* Asst. Professor JAMES FORD. Tuition fee, \$20.

## SOCIOLOGY

- S1. The Principles of Sociology. *Five times a week, at 12.* Asst. Professor BENJAMIN M ANDERSON, Jr. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B.



## SPANISH

- S1. Elementary Spanish. — Reading, grammar, and composition. *Five times a week, at 9.* Mr. GEORGE L. LINCOLN. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Spanish 1.

- S5. Spanish Prose and Poetry of the Nineteenth Century. — Reading and composition. *Five times a week, at 9.* Asst. Professor ARTHUR F. WHITEM. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Spanish 5.

- S7. Spanish Composition and Conversation. *Five times a week, at 11.* Asst. Professor ARTHUR F. WHITEM. Tuition fee, \$20.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Spanish 7.

NOTE: See also *French* and *Italian*.

TABULAR VIEW OF COURSES IN THE SUMMER SCHOOL OF 1917

SUBJECT	9 A.M.	10 A.M.	11 A.M.	12 M.	AFTERNOON COURSES
Chemistry	S1 Boylston S3 " S4 Cool. Mem. Lab.	S22 Boylston	S2 Boylston S6 "		
Economics		S2 Emerson F	S1 Sever 8		
Education	S7 Emerson A S3a Lawrence 18 S14 Music Bldg. S15 " S18 " S3c <sup>2</sup> Lawrence 7 S20c Emerson 27 S19 Sever B	S3b Music Bldg. S16 Sever 26 S17a " 18	S4 Lawrence 18 S12 Music Bldg. S3c <sup>1</sup> Lawrence 7 S17b Sever 18		
English	S4 Sever 6 SC " 18 S33 Warren House S70 Sever 8	S3 Sever 10	S45 Emerson D S67 Warren House		
Fine Arts	S1a Fogg Museum	S5 Fogg Museum	S9c Robinson		
French	S4 Sever 7 S3 " 29	S16 Sever 23	S1 Sever 29 S2 " 19		
German	S3 Sever 17 S4 " 2		S4 Sever A		

Government	S1 Sever 20 S4 Harvard 6	SG Sever 13			
Greek					
History	S1 Emerson H	S4 Emerson H	S5 Emerson H S70 Harvard 6	S32 Emerson H	S25a M., 3.30-5.30 S25b W., 3.30-5.30 Widener J
Italian			S1 Sever 7	S5 Sever 7	
Latin	S1 Sever 13				
Mathematics	SK Sever 32		SC Sever 24		
Music	S1 Music Bldg.		S10 Music Bldg.	S15 Music Bldg.	
Philosophy		S2 Emerson A		S1 Emerson A	
Physics	S1 Jeff. Phys. Lab.				S1 Jeff. Phys. L. at 2
Public Speaking	S8 New Lect. Hall S7 Holden Chapel	S15 Sever 11	S17 Sever 11 S10 New Lect. Hall	S27 Sever 11	S21 5 hours a week, except W. and S. Holden Chapel
Semitic	S9 Sever A				
Social Ethics	S1 Emerson J				
Sociology				S1 Sever 8	
Spanish	S1 Sever 19 S5 " 31		S7 Sever 31		



## OFFICIAL REGISTER OF HARVARD UNIVERSITY

*[Entered March 6, 1913, at Boston, Mass., as second-class matter,  
under Act of Congress of August 24, 1912.]*

---

Issued at Cambridge Station, Boston, Mass., three times each, in January, February, July, August, and September; eight times each, in March, April, May, and June; twice each, in October, November, and December.

---

These publications include : —

The Annual Reports of the President and of the Treasurer.

The Annual University Catalogue.

The Annual Catalogues of the College and the several Professional Schools of the University; the Descriptive Pamphlet; the Announcements of the several Departments; etc., etc.



## SUMMER SCHOOL OF ARTS AND SCIENCES

Fuller descriptions of the courses in the several departments will be sent on application.

The Director will be grateful to any one who will send him the addresses of teachers and others who might like to receive information about the Summer Courses.

Address: Professor K. G. T. Webster,  
19 University Hall,  
Cambridge, Mass.

---

To the Secretary of the Harvard Summer School of Arts and Sciences, 19 University Hall, Cambridge, Mass.: —

Please send me the full description of the courses in .....

.....

*Name,* .....

*Address,* .....

.....

.....

C  
26mZS  
1920

SUPPLEMENT TO

OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOL. XVII

MARCH 22, 1920

NO. 11

Summer School of Arts and Sciences

JULY 6 TO AUGUST 14, 1920

COURSES IN EDUCATION

EDUCATIONAL PSYCHOLOGY	VOCATIONAL EDUCATION
PSYCHOLOGY OF SCHOOL SUBJECTS	VOCATIONAL GUIDANCE
SCHOOL ADMINISTRATION	AMERICANIZATION
SECONDARY EDUCATION	TEACHING OF ENGLISH
HIGH SCHOOL ADMINISTRATION	TEACHING OF FRENCH
JUNIOR HIGH SCHOOL	TEACHING OF MATHEMATICS
ELEMENTARY EDUCATION	TEACHING OF CIVICS
CHILD DEVELOPMENT	SOCIAL STUDIES
EDUCATIONAL MEASUREMENT	ATYPICAL CHILDREN
INVESTIGATION FOR ADVANCED STUDENTS	

UNIVERSITY OF ILLINOIS LIBRARY



CAMBRIDGE  
PUBLISHED BY THE UNIVERSITY  
1920

## INSTRUCTORS

- JAMES LYNN BARNARD, Ph.D., *Professor of History and Government, School of Pedagogy, Philadelphia, Pennsylvania.*
- JOHN MARKS BREWER, Ph.D., *Instructor in Education and Director of the Bureau of Vocational Guidance, Harvard University.*
- WALTER ELMORE FERNALD, M.D., A.M., *Superintendent of the Massachusetts School for Feeble-Minded, Waverley, Massachusetts.*
- OSCAR CHARLES GALLAGHER, A.M., *Superintendent of Schools, Brookline, Massachusetts.*
- HENRY WYMAN HOLMES, A.M., *Professor of Education, Harvard University.*
- ALEXANDER JAMES INGLIS, Ph.D., *Assistant Professor of Education, Harvard University.*
- GEORGE ELLSWORTH JOHNSON, A.M., *Assistant Professor of Education, Harvard University.*
- CLARENCE DARWIN KINGSLEY, A.M., *Supervisor of High Schools, Massachusetts Department of Education; Chairman, Commission on the Reorganization of Secondary Education of the National Education Association.*
- JOHN JOSEPH MAHONEY, *State Supervisor of Americanization, Massachusetts Department of Education.*
- LOUIS JOSEPH ALEXANDRE MERCIER, A.M., *Assistant Professor of French, Harvard University.*
- RALEIGH SCHORLING, A.M., *Principal of the High School and Head of the Department of Mathematics of the Lincoln School of Teachers College.*
- EDWIN ADAMS SHAW, Ph.D., *Assistant Professor of Education, Tufts College.*
- DANIEL STARCH, Ph.D., *Associate Professor of Psychology and Education, University of Wisconsin.*
- CHARLES SWAIN THOMAS, *Director of English, Board of Education, Cleveland, Ohio.*

## GENERAL STATEMENT

The Summer School courses in Education described in the following pages are intended for teachers and school officers. Some of them may be taken with profit by inexperienced persons who are preparing for teaching or school management, but they are gauged in the main to meet the needs of those who have already had experience in school work.

All these courses may be counted by properly qualified candidates toward the degree of Master of Arts, and such candidates may offer a program for the degree consisting wholly of Summer School courses. Those who wish to secure credit toward the Master's degree under the Division of Education should consult the Chairman of the Division, Professor H. W. HOLMES, 6 Lawrence Hall, Kirkland Street, Cambridge, Mass.

After 1920 graduate study in Education both in the Summer School and during the academic year will be conducted under the faculty of the Graduate School of Education. The School will be open in September, 1920. Both men and women will be admitted as students and as candidates for degrees. Inquiries concerning the work of this School, admission, degrees, and expenses, may be addressed to *The Graduate School of Education, 6 Lawrence Hall, Kirkland Street, Cambridge, Mass.*

The complete announcement of courses in the Summer School of 1920, with information as to board, rooms, historical excursions, etc., may be secured from the Secretary of the Summer School, 19 University Hall, Cambridge, Mass.

## COURSES IN EDUCATION

- S7. Principles of Educational Psychology. — A survey of the instinctive equipment of the child, individual differences, correlation of abilities, sex differences, education and heredity, tests of mental abilities, the learning process, sensory defects, observation, transference of training, studying, educational tests and scales. — Lectures, prescribed reading, discussions, and class experiments. *Five times a week, at 11.* Associate Professor DANIEL STARCH, University of Wisconsin. Tuition fee, \$20.

This course will begin with a brief survey of the instinctive equipment of the child in relation to school work. Considerable emphasis will next be placed upon a study of individual differences in the abilities and in the mental make-up of pupils — the measurement, nature, and amounts of these differences and the manner in which these differences are and should be taken into account in school work. In this connection consideration will be given to methods of measuring intelligence and mental growth. A brief study will also be made of sex differences and mental heredity in relation to education.

The latter half of the course will deal with an analysis of the learning process which will include such topics as sensory defects, accuracy of observation in relation to learning, transference of training in specific mental abilities as well as in the abilities involved in school work, methods of studying, educational tests and scales as means of measuring progress in learning. Class and individual experiments will be conducted.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 7.

With regard to credit for A.M., see p. 3.

For further information address Professor DANIEL STARCH, 351 Harvard Street, Cambridge, Mass.



S27. **The Psychology of School Subjects.** — An analysis of the psychological processes involved in the study of school subjects and a survey of experimental and statistical investigations in reading, writing, arithmetic, spelling, and other subjects of the elementary-school program and of certain subjects of the high-school program. The subjects considered will be chosen with reference to the interests of the students in the course. — Lectures, reports, discussions. *Five times a week, at 9.* Associate Professor DANIEL STARCH. Tuition fee, \$20.

This course will undertake a detailed analysis of the psychological processes involved in the study of school subjects. One subject will be treated at a time. This will be followed in each case by a consideration of the factors and conditions which facilitate the learning processes in each subject treated. Ample use will be made of the experimental and statistical investigations which are now available. The subjects to be considered will depend somewhat upon the interests of the class and will consist chiefly of the elementary branches — reading, writing, arithmetic, spelling, language, and such others as time will permit.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3c.

With regard to credit for A.M., see p. 3.

For further information, address Professor DANIEL STARCH, 351 Harvard Street, Cambridge, Massachusetts.

S3a. **Principles of School Administration.** — A fundamental course for present and prospective principals, superintendents, and other administrative officers. — Lectures, reports, and discussions. *Five times a week, at 9.* Mr. OSCAR C. GALLAGHER, Superintendent of Schools, Brookline, Mass. Tuition fee, \$20.

This course is intended primarily for superintendents of schools, for principals of high and elementary schools, and for teachers who wish a systematic course in educational administration. It will also meet the needs of mature students who may desire to study the organization of education as a branch of government.

The course will cover the following topics: —

The legal status of the board of control in relation to the state, the community, and the schools; the formulation of a definite policy for a school system; the school organization to carry out the policy;

the types of schools and classes; the superintendent: qualifications, appointment, tenure; duties and opportunities, relations to other members of the corps; principals and teachers: duties and opportunities; the accountability of all officials; school reports and courses of study.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3a.

With regard to credit for A.M., see p. 3.

For further information, address Mr. OSCAR C. GALLAGHER, Superintendent of Schools, Brookline, Massachusetts.

S33. Problems in School Administration. — School surveys, supervision of instruction, supervised study, the executive problems of the superintendent. — Lectures, reports, and discussions. *Five times a week, at 11.* Mr. OSCAR C. GALLAGHER. Tuition fee, \$20.

This course is intended for superintendents, principals, and teachers who wish to study in considerable detail some of the special problems involved in the organization and administration of school systems.

Among the problems to be considered are the following: — School surveys, supervision of instruction, coöperation of departments, rating of teachers, part-time education, salary schedules, retardation and acceleration, standards and measurements, compulsory attendance laws, extended use of school buildings.

Throughout the course the particular problems of the individual members will be studied in a practical way and constructively criticized. Reading will be suggested, and special studies of assigned topics will be required.

The books prescribed for reading will be found in the University Library or in the Library of the Division of Education, or in both. Students are advised to bring with them such modern books on organization and management as they may own.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3a or 20a.

With regard to credit for A.M., see p. 3.

For further information, address Mr. OSCAR C. GALLAGHER, Superintendent of Schools, Brookline, Massachusetts.

S3b. Principles of Secondary Education. — The factors and principles which underly the theory and practice of secondary education; a general course for teachers and officers of secondary schools. *Five times a week, at 9.* Asst. Professor ALEXANDER J. INGLIS. Tuition fee, \$20.

This course provides for a systematic study of the principles underlying secondary education and is designed for secondary-school teachers, supervisors, and administrators, for school superintendents and others interested in secondary schools. It aims (1) to present the fundamental psychological and sociological factors which enter into the theory and practice of secondary education; (2) to determine the aims and functions of secondary education, as based on those fundamental factors; (3) to consider the problem of subject values in view of the aims and functions of secondary education; (4) to consider current practice and recent developments; (5) to analyze the factors involved in contemporary problems in secondary education; (6) to suggest methods applicable to the solution of problems in secondary education of the present.

To these ends the following topics among others will be considered: (1) the nature of the secondary-school pupil, his physiological and psychological development with special reference to the phenomena of adolescence, individual differences among secondary-school pupils; (2) the character of the secondary school as a social institution, its historical development, American and foreign systems of secondary education, the relation of secondary to elementary education and higher education, social principles determining the nature of the secondary school as a social institution; (3) the aims and functions of secondary education; (4) principles underlying subject values and the program of studies; (5) principles determining the curricula and courses of study; (6) plans for the reorganization of secondary education, including the junior high school and related plans.

The work of the course will be based on; Inglis, Alexander; *Principles of Secondary Education*, with lectures, reading, and discussion.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3b.

With regard to credit for A.M., see p. 3.

For further information, address Professor A. J. INGLIS, Lawrence Hall, Harvard University, Cambridge, Massachusetts.

S31. High School Administration. — A technical course in the administration of secondary schools, for principals, supervisors, and administrative officers. *Five times a week, at 11.* Asst. Professor ALEXANDER J. INGLIS. Tuition fee, \$20.

This course is designed to deal with the organization, administration, and supervision of secondary education in four-year high schools, in junior high schools, and in senior high schools. It includes a consideration of the principles, practices, and problems involved in such major phases of secondary-school administration as the following: (1) the organization of grades according to various systems, e. g., the 8-4 plan, the 6-3-3 plan, the 6-4-2 plan, the 6-6 plan, etc.; (2) the organization of curricula; (3) program-making and schedule making; (4) the organization, administration, and supervision of instruction; (5) the selection and supervision of the teaching staff; (6) the government of the school; (7) the supervision and administration of extra-curriculum activities; (8) marking systems, promotion, standard tests and scales; (9) the administration of part-time, coöperative, and continuation education; (10) educational and vocational guidance; (11) community relations; (12) record systems and office administration; (13) high school finance and the budget; etc.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3b.

With regard to credit for A.M., see p. 3.

For further information, address Professor ALEXANDER J. INGLIS, Lawrence Hall, Harvard University, Cambridge, Massachusetts.

S15. The Intermediate or Junior High School. — Aims, organization, administration, and methods of teaching in junior high schools. *Five times a week, at 12.* Mr. CLARENCE D. KINGSLEY, Supervisor of High Schools, Massachusetts Department of Education; Chairman, Commission on the Reorganization of Secondary Education of the National Education Association. Tuition fee, \$20.

This course deals with the distinctive purposes, courses of study, and methods of the junior high school and its relation to the elementary school and the senior high school. It is designed for teachers in junior high schools and for those intending to teach in such schools, and for principals and superintendents in charge of their administration.

The course will involve consideration of: (1) the need for the reorganization of the school system so as to include junior high schools;

(2) the types of junior high schools adapted to the needs of the communities represented in the class; (3) the program of studies; (4) the aims, methods, and content of the various subjects; (5) educational and vocational guidance in the junior high school; (6) the student activities and other methods of socialization; (7) the articulation with the elementary school and the senior high school; (8) the organization, administration and supervision of junior high schools.

The work of the course will consist of lectures, reading, discussion and reports. Each member of the class will be required to work out in detail some aspect of junior high school instruction or organization.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 15.

With regard to credit for A.M., see p. 3.

For further information, address Mr. CLARENCE D. KINGSLEY, State Department of Education, Boston, Massachusetts.

S3c. Elementary Education. — Motives, activities, and interests of children in elementary-school work. The project method and related forms of teaching. The application of principles of child development and child study to the elementary-school program, class management, and methods of instruction. — Lectures, reading, discussions, demonstrations, essays. *Five times a week, at 12.* Asst. Professor GEORGE E. JOHNSON. Tuition fee, \$20.

The general aim of this course is to discover ways and means of utilizing in elementary education the natural motives and interests of children. Starting with the general principle that human nature is the greatest asset for good in education, and that the office of education is to provide the environment that shall best stimulate the predispositions of children to normal expression in right social relations, the course deals with the characteristics of children of elementary school age, the origin and nature of child activities, motives, and interests, and how these may lead naturally into the fields of human endeavor and achievement which have determined the present conventional subject matter of the school. Thus the course examines in detail the view that organic heredity as represented in child nature is related at every point to social inheritance as represented in the curriculum of the school and to the social relations for which the school prepares its pupils. Application will be made to the several subjects of the curriculum, and practical illustrations given



with respect to language, reading, spelling, history, music, art, arithmetic, nature study, manual arts, physical education, and morals. The course will analyze the chief proposals for more natural methods of teaching and class management in the elementary school, especially the project method, self-organized group-work, and "socializing" activities.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 3c.

With regard to credit for A.M., see p. 3.

For further information address Professor GEORGE E. JOHNSON, Lawrence Hall, Harvard University, Cambridge, Massachusetts.

S14. Child Development. — Stages and characteristics in the mental and physical growth of children; the methods and results of child study and their bearing on teaching, the school program, and home training. *Five times a week, at 10.* Asst. Professor GEORGE E. JOHNSON, Tuition fee, \$20.

This course will consist of a general survey of the methods, and especially of the results, of child study and their relation to psychology, sociology, social ethics, and education. More specifically the facts brought out in the course will be applied to problems of teaching, the program of studies, and home training. Their relation also to the community's program for child welfare in the out-of-school time of children will be noted.

The course will discuss the stages of child development, the physical, mental, and social characteristics of the different stages, and children's interests, activities, and abilities.

Naturally, the course will consider in a general way the physical care and training of children; more particularly, however, exercise and general hygiene; moral training and religious development, social development and training; and, at least briefly, the problem of sex hygiene and instruction.

While the course will not be technical in form or purpose, it will nevertheless bring out facts and induce discussion of great value to prospective teachers and superintendents, trustees, and other officers, lay or professional, engaged in public school, church, institutional, or social work. Especially, it will give a basis for more intelligent parenthood, and possibly more important still, the basis for more intelligent citizenship, or social parenthood, with respect to the community's responsibility for child welfare generally, including child health, child labor, delinquency, vice and crime.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 14.

With regard to credit for A.M., see p. 3.

For further information, address Professor GEORGE E. JOHNSON, Lawrence Hall, Harvard University, Cambridge, Massachusetts.

- S4. Educational Measurement. — A descriptive and critical study of scales and measures and their educational significance. — Lectures, reports, and discussions. *Five times a week, at 9.* Asst. Professor EDWIN A. SHAW, Tufts College. Tuition fee, \$20.

This course is given primarily for those who desire to gain some insight into the purpose, scope, and limitations of the measurement of educational results. Only sufficient consideration will be given to the derivation of scales or other instruments of educational measure to afford an intelligent understanding of them. The course is not intended to train students in the technique of detailed statistical inquiry. The course may be thought of as covering two general phases:

I. Statistical: — the organization of statistics and their interpretation. Such terms as average, median, mode, distribution table, distribution curve, central tendency, deviation from central tendency, and graph will be defined.

II. Educational significance: — aims, scope, and limitations of educational measurement. A survey will be made of the literature of the subject and the class will be given some practice in actual administering, scoring, and evaluating the results, of the standard tests and scales. Statistical results will be studied to determine their educational significance. The survey will cover scales for measuring English composition, spelling, handwriting, drawing, and the measurement of educational results in arithmetic and reading.

Throughout the course the aim will be to give a practical acquaintance with scales, tests, and measures, and to form some estimate of their application to the solution of current educational problems.

This course will consist of lectures, discussions, class exercises, and written reports. Reading will be suggested and some special study of an appropriate topic will be required of all candidates for the Summer School certificate.

Although most of the books prescribed for reading will be found in the Library of the Division of Education, students are advised to bring with them such literature on educational measurement as they may possess.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 4.

With regard to credit for A.M., see p. 3.

For further information, address Dr. EDWIN A. SHAW, 63 College Avenue, West Somerville, Massachusetts.

- S11. Vocational Education. — Training and education for commercial and industrial callings, with an examination of present practice, the needs of the reconstruction period, and desirable developments. — Lectures, reading, visits to plants, discussions, reports, and consideration of special problems. *Five times a week, at 10.* Dr. JOHN M. BREWER, Director, Bureau of Vocational Guidance, Harvard University. Tuition fee, \$20.

This course is intended for teachers of vocational and related work, school administrators, social workers, educational directors of industrial and commercial establishments, and others interested in the movement for broader forms of educational opportunity.

The following topics will indicate the scope of the course: The aims of vocational education, the relation of vocational education to general or broader education, its relation to vocational guidance, "finding courses," the relation of the continuation school to vocational education, education before work vs. education after work begins, the all-day trade school, the part-time and coöperative plans, trade extension courses, evening and correspondence courses, special features for home economics, commerce, and agriculture, preparation of teachers, special problems in vocational education, the administration of vocational education, in town, city, state, and nation, the Smith-Hughes bill, surveys for vocational education.

Advanced students may investigate special problems.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 17.

With regard to credit for A.M., see p. 3.

For further information address Dr. JOHN M. BREWER, Bureau of Vocational Guidance, Lawrence Hall, Harvard University, Cambridge, Mass.

S16. The Principles and Practice of Vocational Guidance. — The vocational problems of children in school and of workers in commerce, industry, and other occupations: a general survey of the vocational guidance movement, with its ethical, cultural, and civic implications. — Lectures, reading, discussions, reports, and consideration of special problems. *Five times a week, at 9.* Dr. JOHN M. BREWER. Tuition fee, \$20.

This course is intended for teachers, administrative officers, parents, social workers, librarians, or others who are interested in planning careers. Particular attention will be paid to the special needs of the members of the class.

The following topics will indicate the scope of the course: The aims of vocational guidance and its importance in the reconstruction period, how the child may gain broad experiences as a basis for understanding the problems of occupations, studying advantages and disadvantages of callings as a basis for choice, methods of teaching in relation to guidance, the use of studies of the curriculum for vocational enlightenment, the class for the study of occupations, surveys, psychological tests, commercial and industrial tests, vocational guidance necessary for successful vocational education placement and employment supervision, causes for school leaving, part-time plans, the continuation school, the work of the employment manager, making readjustments to secure a proper standard of living, better relations between management and men, tendencies toward participation in management, a central office for vocational guidance in a school system.

Advanced students may investigate special problems.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 16a or 16b.

With regard to credit, see p. 3.

For further information address Dr. JOHN M. BREWER, Bureau of Vocational Guidance, Lawrence Hall, Harvard University, Cambridge, Mass.

S40. Americanization. — General course for teachers; an analysis of the problems of Americanization, with discussion of immigrant backgrounds and racial characteristics, and special consideration of the aims, methods, and materials of schooling for immigrants. *Five times a week, at 10.* Mr. J. J. MAHONEY, State Supervisor of Americanization for Massachusetts, assisted by specialists and field workers. Tuition fee, \$20.

This course is intended primarily to give prospective teachers of adult immigrants a knowledge of classroom aims, methods, and materials of instruction. In so far as is possible, opportunities will be afforded for observation and practice. A broad survey will be offered of the Americanization problems. The greater part of the time in this course, however, will be given over to a discussion of the teacher's task. Topics like the following will be treated: —

(a) Aims, methods, and materials in the teaching of English to adult immigrants.

(b) Important teaching principles applied.

(c) The organization of classes.

(d) Aims, methods, and materials in intermediate and advanced classes.

(e) Training in citizenship, looking toward naturalization.

(f) Socializing immigrant instruction.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

S41. Americanization. — An advanced course for organizers and supervisors of Americanization work in schools and industries. General survey of the Americanization movement and its problems, with special consideration of problems of organization and supervision. *Five times a week, at 12.* Mr. J. J. MAHONEY, assisted by specialists and field workers. Tuition fee, \$20.

The experience of the past two years in the field of Americanization has emphasized very clearly the need for skilled leaders both as organizers and supervisors. There is a growing demand on the part of school departments, social service organizations, and industries for people equipped to plan and to lead. This course is offered to meet this growing demand. It makes its appeal accordingly to those aiming to become city directors of Americanization, to officials in industrial plants, to social workers, and to leaders of racial groups. It presupposes some previous acquaintance with the education of the adult immigrant. Some attention will be given to class-room methodology, but in the main, stress will be laid on problems of organization and supervision. Topics like the following will find place:

(a) The immigrant tide 1890–1915, significant statistics; the beginning and development of the Americanization movement; fundamental policies and viewpoints in Americanization; industrial Americanization; Americanizing the immigrant woman; Americanization and the community; legislation operating and pending.



(b) An analysis of immigrant backgrounds and racial characteristics.

(c) What is Americanism? — An analysis of American ideals, beliefs, and attitudes in terms that touch the immigrant's experience.

(d) State and city plans in Americanization; how to organize Americanization activities.

(e) An examination of courses of study and materials of instruction.

The class will be conducted frequently by experienced city and state organizers.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

S17a. The Teaching of English in the Junior and the Senior High School. — The materials, methods, and equipment of a teacher of English in high schools and preparatory schools. *Five times a week, at 10.* Mr. CHARLES SWAIN THOMAS, Director of English in Junior and Senior High Schools, Cleveland, Ohio. Tuition fee, \$20.

This course is designed for those who are interested in the teaching of English. It will examine the fundamental principles that should determine the construction of the English course; the articulation of high-school English with grammar-school English; the teaching of lyric poetry, drama, the novel, the short-story, the essay, and the classics in translation. It will likewise discuss the relationship of grammar, composition, and literature, with special attention to composition — oral and written. Such supplementary aids as periodical literature, dramatics, literary clubs, motion pictures, the school paper, debating, prize-speaking, and library work will receive attention. Suggestions will be offered for adjusting the English course to the needs of pupils in the commercial, trade, and industrial departments.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

For further information address Mr. C. S. THOMAS, Board of Education, Cleveland, Ohio.

S17b. Special Problems in the Teaching of English in Secondary Schools. — For advanced students and experienced teachers. Investigation of special problems in the teaching of literature and composition in the secondary schools, with special attention to the problems of interpretation of literature. *Five times a week, at 11.* Mr. CHARLES SWAIN THOMAS. Tuition fee, \$20.

The course is designed for advanced students and experienced teachers. It will emphasize the study, and interpretation of literary types, with special attention to poetry. It will consider in detail certain specific problems that arise in the teaching of secondary English and will discuss methods that have been found helpful in the practical solution of some of these problems. Early in the course each enrolled member will choose a topic for special investigation, the results to be embodied in a written report. It is hoped that many of these reports may later be published and thus be of general service to English teaching. Students will be encouraged to select their own topics; the following list is only suggestively offered.

A Study of Composition Scales; The Approach toward Uniformity in the Grading of Themes; The Measurement of Results; Establishing Specific Aims with Specific Literary Selections; Minimum Standards for Each High-School Grade; Psychology as an Aid to English Teaching; The Place of Grammar in the High School; Specific Methods for Increasing a Pupil's Vocabulary; Specific Methods for Increasing Variety and Elaboration of Sentence Forms; Supervised Study of English; The Equipment and Functions of the English Supervisor; The School Play; School Debating; The Separation of Composition and Literature Courses; Coöperation with Other Departments; Coöperation and Articulation with the Grammar School; Devices to Arouse Interest in Composition; Certain Phases of Oral Composition; Encouraging Pupils to Write Poetry; Motion Pictures; The Book-Club; High-School Journalism; The Bible in the English Course; The English Teacher's Laboratory Equipment; The Conference Period; Planning an English Course for the Junior High School; The Magazine and Newspaper in the Classroom; Voice Culture; What We Can Learn from the French Methods of Teaching French; Ethical and Social Values of the Literature Selection; Aesthetic Values through Oral Interpretation.

Considerable attention will be given to the examination and discussion of the Harvard-Cleveland English course now in process of testing and revision.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

For further information address Mr. C. S. THOMAS, Board of Education, Cleveland, Ohio.

S19. The Teaching of French. *Five times a week, at 10.* Asst. Professor LOUIS J. A. MERCIER. Tuition fee, \$20.

The course is intended for advanced students and teachers in service, and will be developed to meet their practical needs.

Each will be asked to state his experiences and special problems. These will be taken up in turn, and discussed from the point of view of the history and theory of modern language teaching, the aim being to determine what is applicable under different definite conditions, and especially how far and by what methods the high school can help the student toward a speaking knowledge of the language.

The subject-matter of the secondary school program, including the junior high school, will then be taken up, standard text-books compared, and the possible methods of presenting the several topics discussed.

The course will be conducted at least partly in French, if the class so desires. Special attention will be given to the bibliography of phonetics. Attention is called to French S4 in which practical phonetics and practice in diction will be emphasized.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

For further information address Professor L. J. A. MERCIER, Department of French, Harvard University, Cambridge, Massachusetts.

S21. The Teaching of Mathematics. *Five times a week, at 12.* Mr. RALEIGH SCHORLING, The Lincoln School of Teachers College, New York City. Tuition fee, \$20.

The course will include such problems of the teacher of mathematics and the supervising principal as furnish a basis for orientation in the pending reorganization of subject matter and method: the causes of dissatisfaction of results achieved; the valid aims of the teaching of mathematics; the necessary and sufficient mathematical elements of intelligent citizenship; probable applications; the relation of mathematics to other subjects in the curriculum; the experimental method (on the part of the pupil); the project method; the measurements of results; practice in the use of tests; the use of timed exercises; desirable senior high school electives as determined by differentiated needs of pupils; and the reorganization of mathematics as proposed by the National Committee on Mathematical Requirements.

This course is accepted as a half-course for A.A.

With regard to credit for A.M., see p. 3.

For further information address Mr. RALEIGH SCHORLING, The Lincoln School of Teachers College, New York City.

- S22. Special Problems in the Teaching of Mathematics, with Demonstrations of Work in Junior High School Mathematics. *Five times a week, at 10.* Mr. RALEIGH SCHORLING, The Lincoln School of Teachers College, New York City. Tuition fee, \$20.

This course includes consideration of problems that concern the supervisor of arithmetic and the teacher of junior high school mathematics; the valid aims of a junior high school course; the relation of mathematics to other subjects in the junior high school curriculum; the laboratory form of recitation as a means for providing an opportunity for the pupil to experiment; supervised study interwoven so as to constitute an integral part of the recitation; standardized tests; the place of timed exercises and other drill material; the junior high school program as affected by the reorganization proposed by the National Committee on Mathematical Requirements; the fundamental principles of reorganization; and present developments in the teaching of arithmetic.

Students will be given an opportunity to observe daily the applications of this course to teaching situations in demonstration classes with junior high school pupils.

This course is accepted as a half-course for A.A.

With regard to credit for A.M., see p. 3.

For further information address Mr. RALEIGH SCHORLING, The Lincoln School of Teachers College, New York City.

- S32. The Teaching of Civics, especially in the Junior High School. *Five times a week, at 10.* Dr. J. LYNN BARNARD, School of Pedagogy, Philadelphia, Pennsylvania. Tuition fee, \$20.

The foundation for this course is laid in a survey of the sort of work in civics that is coming to be regarded as essential for the elementary grades, namely, a training in the "civic virtues" and in "community coöperation."

With this as a basis the transition is easy and natural to the study of "community organization," that is, of how the community organizes itself to satisfy its civic needs. This means a discussion of the way in which city or village, state, and nation combine to safeguard health, to protect life and property, to provide means of communi-



cation and transportation, — in fact, to secure all the elements of civic welfare. Careful attention is given to the question of how citizens, young or old, may coöperate with governmental agencies both as individuals and through private organizations.

The course will be made up of lectures on method and subject-matter, reports on assigned readings, and class discussions. The newer source material will be available for reference work, and if possible a first-hand study will be made of some municipal or state activity.

While intended primarily for teachers in the junior high school, the course ought to be helpful both for teachers in the elementary grades and for those in the senior high school. The former will get practical suggestions for their own immediate problems and a clearer realization of the part they are playing in the whole scheme of citizen training. The latter will be helped to a better understanding of the foundation on which their own more advanced instruction should rest, and at the same time will get a working knowledge of the civics they may be required to teach in the first year of a four-year high school.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

For further information address Dr. J. LYNN BARNARD, School of Pedagogy, Philadelphia, Pennsylvania.

S34. Social Studies in the Senior High School. The content and method of social science in the senior high school; plans for instruction beginning with problems of the day and leading into the elements of economics, sociology, and politics. — Lectures, discussions, and the study of classroom methods. *Five times a week, at 12.* Dr. J. LYNN BARNARD. Tuition fee, \$20.

This course begins with lectures that present, in outline, a twelve year program of training in citizenship through the social studies.

With this as a background, the remaining weeks will be devoted to an intensive study of the culminating year in elementary social science. An appropriate title for this final year's work would be Problems of Democracy, as that would exactly designate the method of approach.

Young people face problems, not sciences, and their only interest in the latter is to find explanation and possible solution of the former.

Starting with problems of real and immediate interest, of which there are so many in these days, these young men and women will plunge enthusiastically into elementary text-books and other refer-



ences in economics, political science, and sociology. In the process of satisfying their live interest they are developing intellectual power and at the same time laying the foundation for later study in the social sciences.

The problem method is as reasonable, and as inevitable, in this culminating year of social study as it has proven itself to be in the earlier years of civic training. And it will be the aim of this course to discover topics, source material, and method appropriate to such a year's work.

The course would seem to be helpful to all teachers of history and social science, both because of its survey of the whole field of citizenship training and because of the application, in its wider significance, of the problem method — in other words, of the inductive method — to the social studies.

This course is accepted as a half-course for the degree of A.A.

With regard to credit for A.M., see p. 3.

For further information address Dr. J. LYNN BARNARD, School of Pedagogy, Philadelphia, Pennsylvania.

S20c. The Psychology of Mentally Deficient, Retarded, and Exceptional Children. — Lectures, clinics, exercises in mental testing, demonstration classes, study and observation of practical methods of training, round table conferences under the direction of supervisors and teachers of experience. *First three weeks, mornings, 10 to 1; second three weeks, afternoons, 2 to 5, with morning hours for class and individual work as may be arranged.* Asst. Professor EDWIN A. SHAW, Tufts College, with the coöperation of Dr. WALTER E. FERNALD, Superintendent of the Massachusetts School for Feeble-minded at Waverley. Tuition fee, \$35.

The work of the course will demand practically the entire time of the members of the class.

(a) *Lectures.* The lectures will deal with the chief facts in regard to normal mental and physical development as a basis for the differentiation and study of abnormal cases. The subject of mental tests will be thoroughly discussed, and especial attention will be given in general to the methods of examination and diagnosis of cases. The lectures will be supplemented by practical exercises in the Psychological Laboratory in the giving of mental tests and in the methods of examination.

(b) *Clinical Lectures and Clinical Demonstration.* During the second half of the course, a series of clinics will be conducted at the

Massachusetts School for the Feeble-minded at Waverley, in which various types and degrees of mental deficiency will be thoroughly demonstrated. There will be an abundance of all classes of cases for study and discussion, and especially of the so-called borderline and defective delinquent cases.

(c) *Conferences on Methods of Instruction.* Round table conferences will be conducted by visiting supervisors and teachers of experience on the methods of teaching, materials, and practical problems of special classes in the public schools.

(d) Visits to other institutions will be arranged, in which opportunity will be given for the observation and examination of school and institutional cases.

The course is planned to give careful training to special class teachers and supervisors and others who are preparing to deal with the problems of mental deficiency and delinquency in a practical way. It does not attempt to give expert or professional training in the methods of mental examination and diagnosis.

This course is accepted as a half-course for A.B., A.A., and S.B., but for students in Harvard College cannot be counted in addition to Education 20c.

With regard to credit for A.M., see p. 3.

The course is designed particularly for the preparation of special class teachers. The number of students in the course will be limited. Persons desiring to enter are advised to make early application. A blank will be furnished upon application to the Secretary of the Division of Education, Harvard University.

For further information, address Professor W. F. DEARBORN, Emerson Hall, Harvard University, Cambridge, Massachusetts.

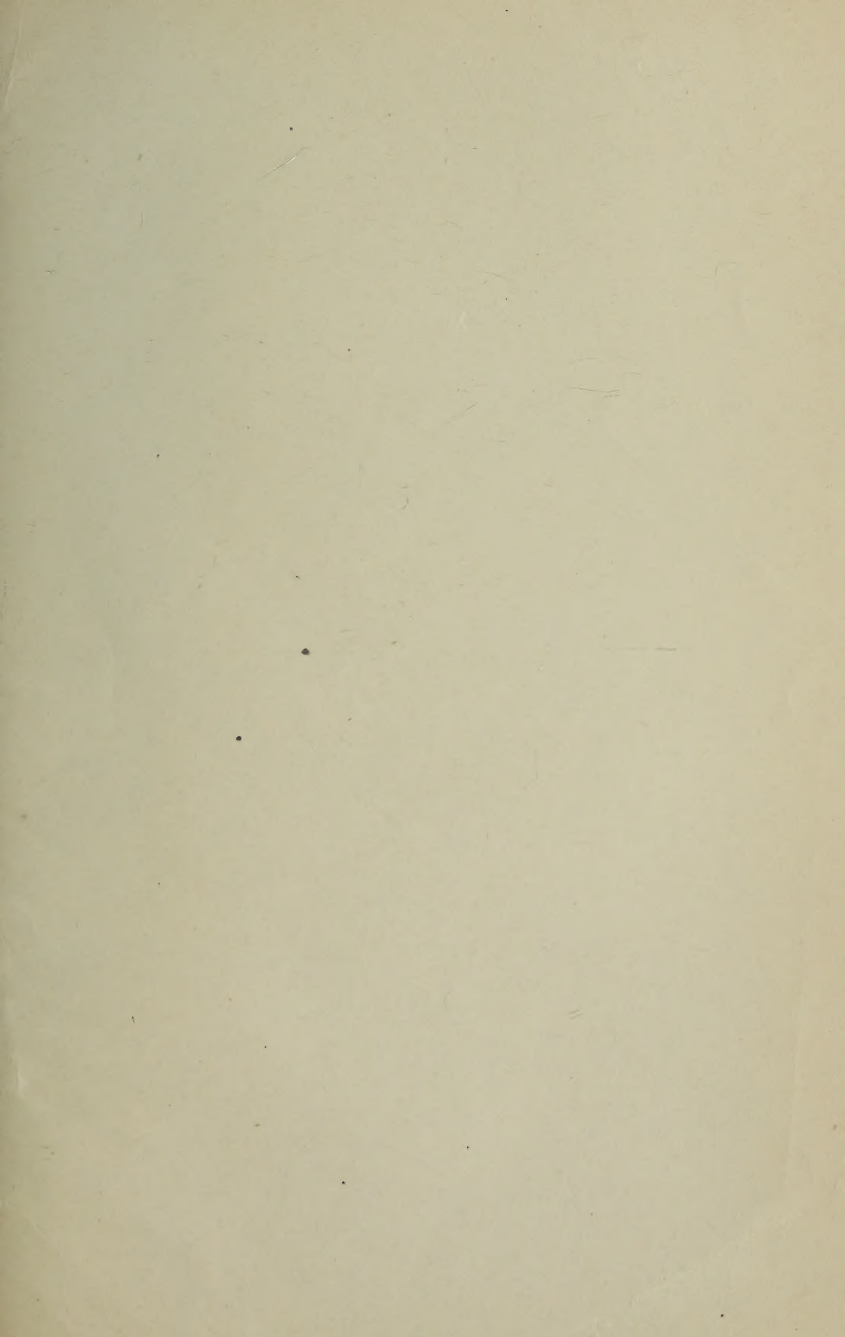
**S20. Problems of Education.** — Reading, discussion, and investigations, for advanced students. *Hours to be arranged.* Professor HENRY W. HOLMES. Tuition fee, \$25.

This course will be conducted by conferences with individual students. Only students capable of advanced and constructive work will be admitted, and they will conduct their studies under the personal direction of the instructor.

With regard to credit for A.M., see p. 3.

For further information address Professor HENRY W. HOLMES, Lawrence Hall, Kirkland Street, Harvard University, Cambridge, Massachusetts.











UNIVERSITY OF ILLINOIS-URBANA



3 0112 111876543